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LECTURES
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BY
MR. YOUATT.

Lecture XXXIX.

THE FIFTH PAIR OF NERVES, THEIR DOUBLE ORIGIN AND FUNCTION.—THE STRUCTURE OF THE SPINAL MARROW, AND DOUBLE ROOT OF THE SPINAL NERVES.—THE ORIGIN OF THE FIBRES CONVEYING SENSATION FROM THE SUPERIOR SURFACE OF THE CHORD, AND OF THOSE CONNECTED WITH MUSCULAR MOTION FROM THE INFERIOR SURFACE.

The Double Origin of the Fifth Pair of Nerves.—The fifth pair of nerves has been described by our anatomists as springing by a multitude of filaments from the crura cerebelli, and forthwith running for security into the cavernous sinuses, and there suddenly enlarging into and forming a ganglion. Human anatomists, however, had long spoken of the double origin of the fifth pair; and the researches of some modern physiologists, and particularly of Sir Charles Bell and Mr. Mayo, have attached great importance to this double origin. The experiments were made on our patients, and therefore we have a legitimate right to refer to them, and to reason upon them.

The Difference between the Two Roots.—The double origin of the fifth pair is plain enough in this dissection, as well as the inequality in the size of the two roots, the inferior being very much smaller than the superior; likewise the difference in the structure of the two, the fibres or fibriculi of the superior root being much larger than those of the inferior. On examining a brain that has been long macerated in alcohol, and thus more easily resolvable into its fibrous structure, the smaller portion can be traced through the pons varolii to the crura cerebri, the prolongation of the *inferior* surface of the brain, and also close to the medullary track in which we have found the motor nerves. The larger portion springs from the lower part of the crura cerebelli, winding from that which answers to the *superior* surface. Again, we find that the fifth pair, or a portion of it, after entering the cavernous sinus, swells out into, or passes through, a ganglion, and, examining more closely, we discover that it is the larger or superior part that forms the ganglion, while the inferior portion passes by the ganglion, and afterwards unites with its fellow to form the perfect nerve.

The Double Function of the Fifth Pair.—These things had been pretty well known to some of the best anatomists; but it remained for Sir Charles Bell to draw from them the legitimate and important conclusion that this is a nerve of double function—of sensation and of voluntary motion. His experiments were simple and satisfactory. He laid bare the root of the fifth pair in an ass, immediately after the animal was killed, and on irritating the nerve, the muscles of the jaw acted, and the jaw was closed. He divided the root of the nerve in a living animal, and the jaw fell. There seemed to be no contradicting this: it had been admitted on all hands, that the fifth was a nerve of sensibility; it was now evident that it was also a nerve of motion. Sir Charles, however, pursued his experiment one step further; he selected the superior maxillary branch of the fifth pair, whose ramifications extend to the muzzle, and he divided it on both sides: the power of elevating and projecting the lip, as in gathering the food, was lost, and in order to open the lips the animal pressed the mouth against the ground, and at length licked the oats from the ground with his tongue.

Mr. Mayo's Experiments.—Mr. Mayo instituted experiments of a similar nature, and although he differed from Sir Charles Bell in some conclusions which he drew respecting the respiratory nerves, yet he arrived at a similar result as to the loss of power in the lips; for when he divided the second and third branches, the lips no lon

ger remained in perfect apposition, and the animal ceased to use them in taking up his food. He, however, ingeniously accounts for this by the loss of sensibility in the part, and he tells us very truly, that when the sense of feeling is taken away from a part, the voluntary muscles cannot be efficiently excited. We have a thousand proofs of this, and therefore this experiment of Sir Charles Bell would not be perfectly conclusive.

Some Muscles are supplied by the Fifth Pair alone.—Leaving these eminent physiologists to settle this matter as they please, there are some anatomical facts, and to which Mr. Mayo properly alludes, which incontestably prove that the fifth is a motor nerve; for there are certain muscles of great power, and particularly the masseter, the temporal, and the two pterigoids, which are supplied by the fifth pair alone, and therefore must derive from those nerves their power of motion as well as of feeling.

The probable Roots of Motor and Sensitive Power.—Then as the inferior root arises from the inferior surface of the prolongation of the spinal chord, and (what we shall better understand when we have examined the spinal chord) it passes by, and does not help to form the ganglion, and its fibres are minute, it is probably the motor root; while the larger and ganglionic, and with coarser fibres, is probably devoted to sensation.

Peculiarities and course of the Fifth Pair.—I will not now minutely follow the course of the fifth pair, I shall have to speak of this when describing the different parts of the face; but I must slightly glance at this portion of our subject. Here, in harmony with what we have already seen, we are first struck with the increased bulk of the trigeminus in all our patients, with regard to both roots of it, and more particularly the motor root. It has far more to do in the quadruped than in the human being. It has to give power of motion to the jaws, which are not only the agents of mastication, but in many animals the weapons of offence; it has to bestow additional sensibility on the lips, which in all of them to a certain degree, and in some of them to a remarkable extent, are to supply the place of hands, not only by executing every prehensile function, but being, as it were, the peculiar seat of the organ of touch. The fifth pair of nerves exert also a peculiar influence over the organs of sense, of which we shall have numerous instances, sometimes very interesting, and at other times not a little mysterious; and which influence will necessarily increase with the acuteness of the sense, greater by far in the quadruped than in man, and therefore requiring greater development of the nerves.

Division of the Nerve.—After the ganglion has been formed by the greater root, and the ganglionless part has joined the other, and a perfect, but evidently compound nerve has been the result, the trigeminus very curiously divides into three parts within the cavernous sinus; and each, before it quits the cranium, assumes to itself its distinct investment of dura mater. These divisions or branches are called from the parts to which they are destined—the *ophthalmic*, the *anterior* (superior), and the *posterior* (lower) *maxillary* nerves. I shall give an exceedingly short, perhaps unsatisfactory, sketch of them. If amidst the multiplication of subjects which these lectures embrace, any are neglected, they must be those of pure anatomy.

The Ophthalmic Nerve.—This is the smallest of the three. It is found within the sinus in conjunction with the superior maxillary; which it soon leaves, and passes through the foramen lacerum into the orbit: there it subdivides and forms three distinct branches—*the supra-orbital* (the frontal), *the lachrymal*, and *the lateral nasal* (the nasal). The *supra-orbital* climbs behind the muscles of the eye, giving some filaments to the rectus superior and to the superior oblique, and some to the fatty matter of the eye; and the main branch, escaping through the superciliary foramen, is soon lost in ramifications on the elevator of the superior eyelid, the integument of the forehead, and the periosteum. *The lachrymal*, as its name would import, is chiefly given to the lachrymal gland; some few ramifications are previously sent to the conjunctiva and the ciliary glands of the upper lid, while a distinct twig of it passes out at the angle between the zygoma and the frontal orbital process, and anastomoses with the supra-orbital, and with ramifications from the superior maxillary, and is also lost on the integument and muscles of the forehead.

The Ophthalmic Ganglion.—The third and the largest is *the lateral nasal*. Almost at its commencement we observe the filaments that help to form *the ophthalmic ganglion*, to which I alluded when speaking of the optic nerve. They are more numerous, and more easily traced, in some of our domesticated animals than in others, and the ganglion itself is differently developed, but for what physiological purpose I know not. It is comparatively larger in the ox than in the horse, and sends more nervous filaments to the iris. Four distinct ones may be traced in the ox, but seldom more than two in the horse or the dog. To these filaments, others of the ophthalmic that have not passed through the ganglion, afterwards join themselves, so that the ciliary nerves are also minute compound ones of motion

and sensation; but more of this when we treat of the eye.

Course of the Ophthalmic.—After running between the rectus superior and the retractor, it gives a branch to the membrana nictitans, and then takes a singular course. Some ramifications go to the frontal sinuses and the foramina, and which piercing the orbit of the eye for this purpose, are beautifully seen in some young animals, and particularly in the sheep; the main branch then enters the cranium again through the internal orbital foramen, passes under the dura mater, and, in the manner that I have described in the fifth lecture, returns through the cribriform plate, and ramifies on the membrane of the nose, and sends some branches as low as the false nostril and the alæ of the nose.

The Anterior Maxillary Nerve, or Second Division of the Trigeminus.—This contains so little that is peculiar to the quadruped, or of practical tendency, that I shall pass it very briefly over. The different situation and conformation of the bones of the face, cause the principal or only variation in the distribution of this branch in the biped and the quadruped. It leaves the cranium through the foramen rotundum; and at the base of the skull gives off small ramifications to the inner canthus of the eye, the antrum and the two posterior molars; also to the cavity of the nose through the sphenopalatine foramen, supplying the lateral portion of the nasal cavity; while filaments are given from the origin of this trunk to the temporal muscle, and a branch also runs along the upper border of the septum to the palate, and a larger branch, which traverses the palate in company with its blood-vessels, passes through the foramen incisivum to the upper lip.

The main trunk of the nerve now enters into the superior and exterior foramen in the hiatus, between the palatine bone and the tuberosity of the superior maxillary bone, and which leads into a bony canal easily to be traced in the horse between the maxillary sinus and the antrum, and appearing as a great pillar passing through the palatine sinuses in the ox;—it traverses this canal, and at length emerges on the face, through the foramen infra orbitarium, and under the levator labii superioris. It no sooner escapes from this canal than it forms the pes anserinus, the goose's foot,—it divides something like the foot of this bird. It anastomoses with, or receives numerous branches from, the seventh pair, and forms a strangely intricate plexus of nerves about the lower part of the face and muzzle, yet one wisely and beautifully contrived, for here, as being the peculiar seat of touch, are required all the flexibility and more than the sensibility of the human hand.

The Posterior Maxillary Nerve, or Third Division of the Trigeminus.—This escapes from the cranium through the foramen lacerum basis cranii, and very soon gives off some important branches.

The First Branch of the Posterior Maxillary, reckoning posteriorly, proceeds backwards below the condyle of the jaw, where it divides into two portions; the first runs up to the parotid gland, ramifies into many filaments, and unites with the seventh pair; it also dips deep into and principally supplies the temporal muscle, and penetrates into and is distributed through the masseter muscle. In this division there would seem to be concentrated the greater part of the motor fibrils of the trigeminus. These are muscles of extensive and powerful motion; and minute anatomical dissection proves to us, that it is with the third division of the trigeminus that the motor nerve is most connected; yet with the motor fibrils those of sensation are doubtless conjoined.

The Second Branch is a long and slender one. It first dips into the pterigoideus muscle, and which is supplied by it, consequently it is here also a motor nerve as well as a sensitive one; it then passes round or behind the tuberosity of the upper jaw, supplies the buccinator muscle, possibly with sensitive fibrils alone, for others go to this muscle from the seventh pair. In the buccinator muscle these fibrils are usually lost, but sometimes a few of them may be traced down to the lower lip.

The Third Branch in the order of its being given off, is *the dental nerve*. This is generally considered as the continuation of the main trunk of the nerve. It passes across the pterigoideus, and enters a canal, *the dental canal* on the inner face of the lower jaw-bone, near the upper edge, and at the bending or angle of the jaw. It takes its course along the interior of the bone, close to the roots of the teeth, and giving branches to each of them as it passes. Emerging through the lower maxillary foramen, it divides into two branches, one of which is spent in numerous ramifications on the outside of the lower lip, and the other in fewer ramifications on the inside of the lip. These are evidently sensitive fibrils, and the power of motion is derived from the seventh pair.

The Fourth Branch in point of order, but which does not enter into the dental canal, is the *gustatory or lingual nerve*, and which is the largest of the four. It is singularly flat, like a little riband. It runs along the inside of the lower jaw, and a portion of it enters a foramen in the jaw to supply the roots of the incisor teeth with nervous influence, but the main nerve, proceeding ob-

liquely downward, gives fibrils to the submaxillary glands, and to the glands and muscles at the base of the mouth generally; these fibres form true plexuses about the salivary glands and the muscles of the tongue; they anastomose freely with the twelfth pair (the *linguales* or motor nerve of the tongue), as this nerve had previously done with the seventh pair (the portio dura). The gustatory branch penetrates the substance of the tongue between the stylo and genio-glossal muscles, passes obliquely to the surface of the tongue, and terminates in the papillæ, and these papillæ thus endowed with nervous influence are the seat of the sense of taste.

The Fifth a Compound Nerve.—It appears then that the fifth nerve has *a double origin, and a double function*—the larger portion, and *that which passes through a ganglion, is derived from the superior surface* of the supposed prolongation of the spinal chord, and the smaller, and *the ganglionless, springs from the inferior surface.* The portion *with the ganglion* is devoted to *sensation; that which afterwards joins it* is connected with *motion;* and thus the same sheath contains sensitive and motor fibrils, and *the nerve is devoted to the double purpose of sensation and voluntary motion.* The sensitive root, however, is so much larger than the other, and the sensitive fibrils so much more numerous, that it may still be called the sensitive nerve of the face; and upon mature examination we are assured that it is the only nerve of the brain whose fibrils bestow sensibility on the face, except a few fibrils from the cervicals which may be traced to the lower part of it.

THE SPINAL MARROW.

Now then, Gentlemen, we shall, perhaps better understand our subject, if, for a little while, we leave the brain, and inquire into the construction of the nerves that supply the frame generally, and direct the voluntary motions of the muscles of the body, and bestow sensibility on every part; and these, as every tyro knows, can be traced on the trunk directly to the *spinal marrow,* and indirectly to it in the limbs, through the medium of the humeral and femoral plexuses.

Commencement of the Spinal Marrow.—I have already said, that I cannot point out the particular spot where the medulla oblongata terminates, and the spinal marrow commences: but I observe the medulla oblongata decreasing in width; the corpora olivaria in the human being subsiding into the general level, and in the subjects with which we have to do, the comparatively flattened and extended portions at the side of the medulla oblongata (answering to or comprising both the corpora olivaria and restiformia of the human being) also rapidly narrowing, and the diminution of width, proceeding until I arrive at the spot, or nearly to it, where this prolongation of the brain quits the cranium and enters the spinal cavity:—this spot, the mouth of the foramen magnum, I consider to be the place where the medulla oblongata ends, and the medulla spinalis commences.

Form and Appearance of the Spinal Marrow.—When exposed to view the spinal marrow has the appearance of a flattened cylinder, somewhat more convex superiorly than inferiorly. It is small compared with the canal through which it runs. The brain completely fills the cranium. It does so in sickness and in health, for however emaciated the frame generally may become, the absorbents spare the brain; or if from local disease a part of it wastes, the vacuity is occupied by some fluid. It was necessary that concussion should be avoided in so important an organ:—there could be no joints in the cranium, they would have interfered with its requisite strength, and concussion and injury were obviated by the cranium being always full. But the spine is composed of a series of joints;—the dorsal vertebræ admit of as much motion as is consistent with strength, and the cervical necessarily possess considerable motion. If the canal was perfectly occupied by the marrow, the chord would be seriously compressed and injured by the various, and rapid, and extensive flexures of the vertebral column, and particularly of the neck.

Comparative Size of the Marrow.—It varies, however, in bulk in our domesticated animals. It is comparatively larger in the quadruped than in the biped, and that with evident reference to the different muscular power of each. It is more developed in the horse than in the ox or sheep. Notwithstanding the peculiar width of the medulla oblongata in the latter, the spinal marrow itself shrinks to a small chord. It is comparatively larger in the little horse than in the bulky dray-horse, and evidently more developed in the blood-horse than in him who has no pretension to foreign admixture. It seems to have intimate connexion with muscular strength and endurance. There is much in the bulk of the muscle, and more in its situation or the mechanical advantage with which it acts; but there is more yet in the degree of nervous influence which causes the muscle to contract. The conformation of the horse is a very important and sadly-neglected branch of study. I am sorry to say that there are many among us who have no definite or philosophical idea of the connexion between the proportion and the position of certain parts, and muscular action. Those of us,

however, who know or fancy we know the most about this, are often egregiously deceived; and the horse, beautifully proportioned, according to our notions, has neither spirit, strength, nor endurance. If we could look into the spinal canal, and especially if we could comprehend the mechanism of the brain, the mystery would be at once unfolded. To the development of the spinal chord in carnivorous animals we must chiefly trace their immense strength. Neither the bulk nor the position of the muscles of the jaws and neck of the tiger will satisfactorily account for the ease with which he will bear away, at full speed, an animal twice as heavy as himself. Mr. Neilson gives an account of a bear steadily carrying a dead horse over a small tree that had fallen across a river. The explanation is to be found in the excess of stimulus with which the muscles are supplied, and that connected with the bulk of the spinal chord, and the corresponding development of the nerves.

Size of the Spinal Chord in different Parts of the Canal.—The varying bulk of the chord in its passage through the spinal cavity will afford us some illustration of this. It nowhere fills the cavity, for the position of the vertebral column, and the form of the canal, are so continually changing, that the marrow would be exposed to compression and injury. In the upper part of the cervical division of the canal it is of considerable size, for it has to supply with nervous influence the numerous and powerful muscles which support and rotate the head. As it proceeds down the neck it evidently diminishes; but when it approaches the lower cervical vertebræ it swells out again, for it has to furnish these plexuses of nerves which bestow sensibility and the power of voluntary motion on the fore extremities. After it has passed the first dorsal vertebra, and the muscles of the spine and the ribs alone are to be fed, it contracts again, and to less than its former dimensions; it loses as it were the lateral column whose function has been discharged; and it becomes diminished to a mere cylindrical chord; but, arriving at the lumbar vertebræ, where the femoral plexuses begin to be formed in order to call into action the muscles of that part of the frame in which the power of the horse seems peculiarly to reside, it once more thickens and widens, and attains a bulk to which it had not reached before:—and, finally, the lumbar vertebræ being traversed, it rapidly and strangely shrinks, until it becomes a mere point, for it has the tail alone to feed. Before the spinal marrow quite disappears, it divides into a great number of chords, some of which soon terminate, while others extend into the coccyx; this portion of the marrow is called the *cauda equina*, from its supposed resemblance to a horse's tail. In every part of the canal the bulk of the canal has reference to the size or the function of the neighbouring muscles; and so the animal principle preponderates in the inferior part of the creation, while the extent of intellectual power in the human being more than compensates for the deficiency of brute strength.

The Columns of the Spinal Chord.—It does not require any very minute inspection of the spinal marrow, to observe that there is a mesian furrow running through its whole extent. It is more evident on the inferior than the superior surface, but sufficiently plain on both. It is a very convenient sulcus for the transmission and defence of the blood-vessels of the chord; but it is more than this—it constitutes a longitudinal division of the chord into two equal parts. Observe how readily, in this hardened brain, the chord separates in the direction of this furrow. You see the lacerated portions of minute medullary fibres running across, and, quite as plainly, an exceedingly fine cellular membrane. In fact there are two nervous chords placed in apposition with each other through the whole extent of the spinal canal; connected with, yet distinct from each other, and each discharging its proper function with regard to the side of the body on which it is placed. Some of the paralytic affections of the human frame are illustrations of this; hemiplegia however is a disease that rarely occurs in the quadruped. The medullary bands between the two columns are more evident in the human being, and preserve perhaps a greater sympathy between the two divisions of the chord.

The Lateral Furrows.—Running parallel with the mesian furrow is another on each side, and on both surfaces. It is very distinct on the superior surface of the chord, and may be satisfactorily traced on the inferior one.

It is sometimes peculiarly interesting to observe the slow progress of the most important discoveries. Sir Charles Bell, to whom we are indebted for almost all we know of this portion of the nervous system, was long in detecting these subdivisions; indeed, in the early editions of his admirable system of anatomy, he speaks of a distinction, convenient for the purpose of illustration, but which has no structural existence. He says that "the two lateral portions are divided into an anterior (inferior) and posterior (superior) portion, so that this prolongation has *four* distinct portions." He has since discovered, and it is the key-stone to our knowledge of the structure and function of the spinal chord, that there are six distinct portions. Observe this transverse section

of the spinal marrow. Can you not trace three distinct chords on each side—a central one superiorly and inferiorly, and a lateral one?

The Central Canal.—The perfect distinction or separation between the central columns, superiorly and inferiorly, is a most important thing. There is a cavity interposed between them—a central canal along the whole course of the spinal marrow. I must claim the discovery of this for a veterinary surgeon. Mr. Sewell, the assistant professor at the Veterinary College, so long ago as the year 1808, in a letter to the Royal Society, describes this canal running from the fourth ventricle through the whole length of the spinal marrow, containing a limpid colourless fluid, and lined by an arachnoid membrane. How near did this gentleman approach to one of the most interesting discoveries in physiology that was ever made! An error with regard to the *commencement* of the canal possibly prevented the discovery of the true structure of the spinal chord from becoming the proud boast of a veterinarian. I will not enter into the disputed question who was the actual discoverer of these six columns, let the honour be awarded, if due, to M. Bellingeri of Turin; but the conclusion, the all-important physiological and pathological deduction, from this structure of the spinal chord, I will claim for an English physiologist, the veterinary students' patron and friend. Respect and gratitude give me a double interest in his well-earned fame, although I now see him, with some others of his brethren, and to the exclusion of the only legitimate claimants—veterinary practitioners—sustaining the strangely anomalous character of *a medical examiner of veterinary pupils*; and for which, in truth, even *he* is, and can be, no more qualified than I am to occupy a place at the board of Apothecaries' or Surgeons' Hall.

Sir Charles Bell's Important Discovery of the Functions of the different Columns.—Now, Gentlemen, examine once more these lateral furrows. Do you find some difficulty in tracing the inferior one? You will see on both surfaces at certain distances, and from one end to the other of the canal, little nervous fibrils coming out in a line, and then approximating and forming a nervous chord. On each surface they proceed from this furrow—from the superior surface plainly enough—and, after close observation, there can be no doubt that they spring from the same furrow on the inferior surface. It is evident, from the manner in which they spring from the chord, and from dissection of the hardened spinal marrow, that these fibres come from the central column above and below. Now, Gentlemen, please to recollect what has been said of the cerebral nerves of pure sensation and pure motion, and the double root and double function of the fifth pair.

The Manner in which the Spinal Nerves arise.—Permit me to refer you to, and to recommend to your careful, and I am sure profitable perusal, Sir Charles Bell's own account of this, in his admirable "Exposition of the Natural System of the Nerves." The short sketch which I am about to attempt will somewhat prepare you for that perusal, and will chiefly consist, although, in other words, of the sum and substance of what he has stated. I observe, first, the nerves from the superior surface, and I have already seen that that superior surface answers to the portion of the brain which gives origin to nerves of sensation—I trace these fibrils from the *centre* of this surface—I observe that they come out as it were *bodily* from the chord, that they approximate, unite, and *run into and form, a ganglion.* I turn to the inferior surface, which more plainly answers to that part of the brain whence I traced the origin of the *motor* nerves—I there observe these fibrils—they arise from the *centre*—they are *smaller* and more *superficially attached* to the chord—they also approximate—they unite—they form a nervous chord:—*they have no ganglion*, but they join the chord from the superior surface, immediately beyond its ganglion, and, as they are penetrating the dura mater, and emerging from that membrane, they coalesce and become one nerve. "Is it then," inquires the discoverer of the function of the spinal chord, "is it by means of these separate and essentially different origins, that the spinal nerve is enabled to discharge its apparently double office?" A less cautious physiologist would have jumped at once to a conclusion. He has recourse to the infallible test of experiment, and in the conducting of the necessary experiments, the humanity of the inquirer reflects on him as much credit as his physiological acumen, and forms a highly honourable contrast with the recklessly brutal system of torture adopted by some other inquirers.

Bell's Experiments.—He opened the spinal canal of a rabbit, and cut the superior roots of the nerves of the hinder extremity. The creature crawled. The protracted cruelty of the dissection deterred him, he says, from ever repeating this experiment, and he reflected that it would be quite as satisfactory if performed on an animal recently knocked on the head and rendered insensible. He struck a rabbit behind the ear, and exposed the spinal marrow. On irritating the superior roots of the nerves he could perceive no motion on any part of the

frame; but on irritating the inferior roots, at each touch of the forceps, there was a corresponding motion of the muscles to which the nerve was distributed. This was perfectly satisfactory, and he now felt himself justified in coming to the conclusion, that "the inferior roots of the spinal nerves bestowed the power of muscular motion, and the posterior roots sensibility."

The true Structure of the Spinal Nerves.—If you will now recollect what I have stated of the fibrous structure of the nerves, that not only each fasciculus, but each little fibril, was surrounded by its own neurilema, you will easily conceive the possibility of these nerves of different function pursuing their course independent of, and uninfluenced by, each other; or, in the words of my great master, if I may dare so to call him, and with which I will dismiss you—"each filament or track of nervous matter has its peculiar endowment, independently of the others which are bound up along with it, and continues to have the same endowment throughout its whole length."

DESCRIPTION OF A

FOSSIL FOX.

By Mr. MURCHISON *and* Mr. MANTELL.

Condensed from the "Geological Transactions."

AMONGST other interesting matters contained in the recent volume of Transactions, published by the Geological Society, is the description by Mr. Mantell of a fossil fox, found in quarries of Œningen, near Constance. These quaries are known to have been worked as early as the year 1680, and have excited the curiosity and stimulated the exertions of many naturalists. The variety of animal and vegetable remains found at different times in these situations would astonish any geologist unacquainted with the wonderful fertility of these quarries. Several quadrupeds and birds are mentioned, a vast number of fishes, reptiles, insects, and innumerable plants. In 1829, the fossil fox was discovered by Mr. Murchison, in a bed of whitish-grey marlstone. The fossil nature of this stone has occasioned it to split into two slabs, with such uneven surfaces, that characteristic portions of the bones or impressions of them are seen in each. The slab containing the more perfect portion of the animal has been selected by Mr. Mantell for his operations of clearing away the surrounding rock. Mr. Mantell in his letter to Mr. Murchison proceeds as follows:—

"In compliance with your request, I beg to offer a few remarks on the osteological characters of the extraordinary fossil discovered by you in the Œningen limestone, a fossil which far surpasses in interest any of the wonderful remains which had been found in that deposit.

"When you first submitted this matchless specimen to my chisel, you expressed your conviction that it would prove to be a species of fox; and as I proceeded in the interesting task of removing the stone from the skeleton, I found myself warranted in agreeing with you in that opinion. When the specimen was entirely exposed, I procured a recent fox, and dissected the skull, extremities, &c., and upon comparing them with the fossil, could detect no essential difference. Through the kindness of Mr. Clift, I have since been able to examine the skeletons of several varieties and species of the genus vulpes in the museum of the College of Surgeons, namely, five or six individuals of the vulpes communis; the black fox, the crop fox, and the isatis or white fox. The skull of the last-mentioned species is more obtuse than that of the fossil; but the skull of the common fox and its varieties do not differ more from the fossil than from each other; in fact, there was not a greater difference observable than between the skull and teeth of individuals of the recent animals of various ages and countries. In making this observation I would, however, particularly remark, that the skull of the fossil is unfortunately so much broken and defaced, that the true form of the frontal bone, post-orbital apophyses, &c., cannot be correctly determined, and that these alone might be expected to afford essential specific characters.

"In the other parts of the skeleton, the only differences I noticed were the following, viz., the spinous process of the *dentatus* appeared to be more expanded; the *radius* more cylindrical and elegant near its brachial extremity; and the *fibulæ* larger and more rounded than the corresponding parts of the skeletons of the *vulpes communis*, which I had an opportunity of examining. I do not, however, think that these slight variations in osteological structure are alone sufficient to establish a variety, much less a species. Near the angle of the lower jaw of the fossil there is a process of bone so like the *styloid* in form, and occupying the situation it might be supposed to occupy if these animals possessed such a process, that its appearance was at first very puzzling. Upon minute examination I am inclined to believe, that it is a spiculum of bone, displaced by the fracture and compression which the skull has sustained, and that its situation is accidental; it is, however, too

remarkable an appearance to be passed by without comment.

"I very much regret that from my limited means of observation I cannot offer more satisfactory results. The remarks of Baron Cuvier on the bones of the animals of this genus found in caverns, '*that they may with almost equal propriety be assumed to belong to one recent species as to another*,' will apply to the splendid specimen before us. If the skull were perfect, more rigid conclusions might be obtained; but as this is not the case, I beg to submit that the only inferences we are warranted in deducing are the following:

"1. That the fossil animal belonged to the genus *vulpes*.

"2. That it bears a closer analogy to the *vulpes communis* than to any other with which it has been compared.

"3 That notwithstanding its resemblance to the recent, it may possibly belong to an extinct species, since specific differences cannot always be detected in the skeleton."

In addition to Mr. Mantell's statement, Mr. Murchison observes, that the occurrence of a black-coloured matter in the place of the abdomen, immediately beneath the lumbar vertebræ, induced him, under the supposition of its being the fossil fæces of the animal to submit a portion to the examination of Dr. Prout, who after analysis pronounced it to be of the same nature as the balls of *album græcum*, and coprolites of Dr. Buckland. This is the first instance in which the fossil substance has been found in the body of a land quadruped, although Dr. Buckland has observed, that it occurred in the abdominal regions of saurians. In this case, however, it is not the coprolite alone which contains phosphate of lime; for, by other experiments of Dr. Prout, it appears that the entire black of the surrounding marlstone is also impregnated with the same mineral. There seems, therefore, to be every reason to conclude, that the bituminization of this mass of rock is due, in a great measure, to the destruction of the large quantity of animal matter contained in it; for the coprolite itself only differs from the surrounding matrix in containing a greater proportion of lime.

IMPORTANT CASE OF

INFLAMMATION OF THE LUNGS IN A NEW-BORN INFANT,

GIVING RISE TO A SUSPICION OF

MURDER BY SUFFOCATION.

By A. A. Lecadre, M.D., *&c., &c.**

Of all the branches of the medical art that which assists the legislator in his decisions on the guilt or innocence of accused individuals, deserves the most minute and scrupulous attention. The most trifling observation, the least remark, even a solitary word, is sufficient on some occasions either for the detection of the guilty or the preservation of the innocent. The sagacity essential to the medical jurist, is pre-eminently the fruit of experience in medico-legal cases. In that which I am about to relate, it will be seen that in case of much suspicion, some very simple circumstances decided the opinion which I advanced, and which the judges adopted.

On the 3rd December 1851, I was required by the solicitor general of the tribunal of Havre to proceed to the exhumation and dissection of a new-born child which had been interred the evening before, and whose death was suspected to have been the result of suffocation. The following circumstances led to these suspicions:—the mother of the infant had been separated for more than fifteen months from her husband, a sailor. She had, however, met him six months before, during a brief period of two hours for which the vessel touched at Havre. She subsequently declared publicly that she was pregnant, and immediately before the birth of the child, said she was but six months gone. On the 24th of November she was confined, and the child was readily recognised to be of the full term. In six days the child died suddenly. The midwife, who had left the woman and child well on the third day after delivery (November 27th), returning on the sixth day, to her astonishment learned of the infant's death: finding the lips and body of a violet colour, she gave information to the police. An inquiry was consequently directed.

The body having been exhumed, was carried to an adjoining house. Its length was eighteen inches, and the weight between six and seven pounds. The umbilical chord was withered and almost separated; the head was covered with hair more than half an inch long; the nails were so

* Annales d'Hygeine publique, &c, &c.

long as to pass beyond the extremities of the fingers. Everything, in short, indicated that the infant had attained its full term. The right side of the face, the chest, and back, were covered with livid cadaveric spots, and several spots of the same kind existed over the limbs. The abdominal integuments were of a greenish colour, and in a state of incipient putrefaction. There was no trace of bruise, ecchymosis, fracture, dislocation, or wound, on or about the head, trunk, or limbs.

On opening the body we found,—1st, *Head*. Nothing abnormal. The venous vessels of the brain gorged with black blood. The bones touching, except where separated by the fontanelles.—*Mouth*. Slightly red internally and posteriorly. The frænum linguæ entire.—*Larynx* and *trachea* natural and free from mucous obstruction.—2nd, *Thorax*. *Lungs* apparently healthy, of a red colour, considerably gorged with blood—floating completely on water, as well while entire as in separate sections; they were not, however, sufficiently buoyant to float the heart and liver. The heart, which was well developed, had its right cavities filled with black liquid blood. All the veins terminating in the heart were similarly turgid. The left cavities of the heart, with the vessels thence issuing, were void of blood and collapsed. The foramen ovale was almost obliterated.—*Abdomen*. The *stomach* and *intestines* void of food, and presenting occasional patches of arborescent vascularity, and containing no feculent matters. The *bladder* was full of urine. The *liver*, spleen, and kidneys, on incision, gave out a large quantity of black liquid blood.

The death of this infant then resulted from asphyxia, but of what kind? and what was its cause? The day before his death, the thermometer having fallen remarkably, I inquired if he had been exposed to the cold. A negative answer was returned, and questions relative to the possibility of death by overlaying were replied to in a similar manner. In my report, therefore, I pointed out asphyxia as the cause of death, but I abstained from assigning any cause for the asphyxia. In a few days I was cited before the *judge d'instruction*, and then the mode of death of this infant became perfectly intelligible. Witnesses were then examined, who deposed that, from the first hour of its existence, the child showed symptoms of pulmonary disease. He sucked with difficulty, was oppressed, had a slight cough, with mucous expectoration. An apothecary deposed that a messenger came from the mother for "something good for a baby with a sick chest." He gave some syrup of capillaire, but the child's oppression increased, and he died on the 30th, after experiencing great difficulty of respiration.

It was thus rendered evident that the child's death was occasioned by pneumonia, a disease so prevalent among new-born infants, that of twenty deaths fifteen generally proceed from this cause. If, on the inspection of the lungs, no traces of this disease were found, this depended on the fact that it is impossible to distinguish the pulmonary congestion of the first stage of pneumonia from the congestion dependent on simple asphyxia. Again, this kind of pneumonic congestion only existing in the early days of the disease, it is not surprising that the midwife who left the child well on the 27th, found it dead on the 30th. Indeed, infantile pneumonia is frequently fatal in even a shorter period.

The preceding explanations being deemed sufficient, the accused was acquitted.

CASES OF

MALIGNANT CHOLERA,

TREATED WITH LARGE DOSES OF

CALOMEL, &c.

By D. Tod, Esq., *Surgeon, Hampstead Road.*

Case 1.—On the 15th August last, a gentleman residing in the Minories, was taken suddenly ill in the afternoon whilst walking along the street, and was obliged to return home. After his arrival he gradually became worse, and about midnight was seized with vomiting and purging, and cramps in the stomach and extremities, with a deadly coldness over his whole body; and in this state I found him in the following morning at eight o'clock. In addition to these symptoms, I learnt that he was exceedingly thirsty, had passed no urine, and his pulse could not be felt at the wrist. The usual remedies to allay the vomiting, and to restore the heat to the surface of the body were immediately resorted to, and repeated at short intervals for nearly thirty hours without giving the least relief. At last I had recourse to mercury (for to all appearance he was rapidly sinking), and began by giving ℈j of calomel, and by rubbing in ʒij of ung. hydr. fortius every hour, until his mouth or breath became affected. Next day, on my arrival, I learnt that in about six hours after the commencement of the mercurial plan the vomiting and purging had entirely ceased, and that the heat gradually returned to the surface; shortly afterwards he fell into a sound sleep, bathed in perspiration.

In three weeks he was quite well.

Case 2.—On the 30th March last, Mr. S., aged 60, residing in this neighbourhood, was suddenly seized at midnight with cramps in the extremities and abdomen, and afterwards with vomiting and purging. In this state I found him on the following morning at six o'clock. On investigation, I found that his whole body was as cold as marble, that he had no pulsation at the wrist, had passed no urine, and complained of great oppression in breathing. According to the treatment then recommended, I immediately gave him an emetic, which cleared his stomach in a few minutes; afterwards ℈j of calomel and a wine-glassful of a strong stimulating mixture, composed of opium, ether, camphor, alcohol, &c., and repeated the latter dose every fifteen minutes. I also had him rubbed before a large fire with flannels, and afterwards put into a warm-bath, as soon as it could be procured.

After remaining in the bath about twenty minutes he became drowsy, and was immediately removed, rolled in blankets, and put into bed. In the course of an hour he fell asleep, bathed in a most profuse, warm perspiration, and died in four hours afterwards.

Case 3.—J. English, residing at 17, Fitzroy-market, aged 21, was taken suddenly ill about one o'clock in the morning of the 30th March last, with vomiting and purging, cramps in the legs, a coldness over the whole body, great thirst, and oppression in breathing; no secretion of urine; in this state I saw him at eight o'clock. He had also no pulsation at the wrist. Ordered him an emetic; and after the stomach was cleared, to take ℈j of calomel every hour, and a dose of a very gentle stimulating mixture every four hours. After having taken five doses of the calomel, I ordered him to be sent to the hospital in consequence of being destitute of the common necessaries of life. In three weeks he quite recovered.

Before he was removed from his lodgings, all his symptoms were much abated, and I have no doubt that his recovery was owing to the mercury.

Case 3.—On the 8th April last, J. Atfield, aged 26, residing at 12, Frederick Street, Hampstead Road, was taken ill with vomiting and purging, cramps in the stomach, and coldness over the whole body, constant thirst, and no secretion of urine. In this condition I saw him six hours after the beginning of the attack. He had also no pulsation at the wrist. I immediately gave him ℈j of calomel, and desired it to be repeated every hour until he had taken a drachm. Shortly after the first dose of calomel, the vomiting and purging appeared to be much abated, seldom occurring oftener than once every twenty or thirty minutes.

During the evening a physician was called in, who ordered him to take opium in pills, which he fortunately always threw up in less than a minute after they were taken; also a stimulating mixture, combined with opium and liquor potassæ, to be taken in doses every 2 hours. Next day he was much worse, and apparently sinking. In the evening I took about fourteen ounces of blood from the arm in a full stream, which caused syncope, and I left him for the night. On the following morning I learnt that his mouth was affected with the mercury, that he had slept for several hours during the night, that the vomiting and purging had ceased, and he was warm over the whole body, but had not made any urine.

After this period he progressively recovered, but in consequence of being removed into the country by his family, he had a relapse, and in two days died, apparently from the effects of the journey.

Case 4.—On the 17th April last, Mrs. Atfield, the wife of the former patient, was taken suddenly ill with the usual symptoms of cholera, and in two hours afterwards, on being called, I gave her ʒss of calomel, which, to my agreeable surprise, put a stop to all her symptoms, and on the following day she appeared quite well.

Case 5.—On the 22d June last, a gentleman in my neighbourhood was taken suddenly ill with the usual symptoms of cholera while in the city transacting business. Twelve hours afterwards I was desired to see him. I immediately gave him ʒss of calomel, and repeated the dose in the course of an hour; also desired half an ounce of ung. hydr. fort. to be rubbed in every hour for four hours. Shortly afterwards the mercurial action was apparent, when all his symptoms gradually ceased, and in ten days, with the exception of his sore mouth, he was quite well.

Case 6.—On the 23d June, William Cannon, aged 36, residing at 40, Charles Street, Hampstead Road, was taken suddenly ill with all the symptoms of cholera, and six hours afterwards I was desired to see him. The same mode of treatment was pursued as in the former case, and was attended with the same result.

In this case a relapse took place, in consequence of having begun too soon to take nourishing food, but with gentle care he soon recovered.

Case 7.—On the 12th July last, William Morris, aged 50, residing at 1, Frederick Place, Hampstead Road, was taken suddenly with the usual symptoms of cholera, and had had administered to him sixpennyworth of brandy before I was called in.

Five hours after the commencement of the attack I saw him, and immediately resorted to the same mode of treatment which I pursued in the two former cases, but the mercury did not take effect, and he died in fourteen hours.

At my first visit the symptoms were not of that violent character which would have led any one to think he would die, but as soon as his wife acquainted me with the brandy which he had taken, I immediately pronounced the case to be fatal.

Case 3.—On the 14th of July last, Mary Shipley, residing at 12, Henry Street, Hampstead Road, was suddenly seized with the usual symptoms of cholera, and had taken a small quantity of brandy, a small dose of calomel and opium, and the mixture recommended by Dr. Stevens, at the desire of a medical gentleman before I saw her. On my arrival, three hours afterwards, I immediately gave her ʒss of calomel, and ordered ʒiss of ung. hydr. fort. to be rubbed in. Next day all the symptoms, except the purging, were considerably relieved, and with very gentle treatment she was in nine days pronounced convalescent.

N.B. Three other cases have been under my care since the last mentioned, which have undergone the same mode of treatment, and are now convalescent. I have also recommended several medical friends to pursue the same plan in the treatment of this disease.

Remarks.

On perusing the above cases of spasmodic or malignant cholera, it will be perceived that the first fatal case was treated according to the stimulating plan, and died in eight hours afterwards; and that the second took a large quantity of brandy before I saw him, and died in sixteen hours.

In the treatment of this disease I have, except in the two first cases, paid no attention to symptoms, because they are not the cause, but merely the effects of the malady, and a favourable issue has invariably been the result. In disease a certain action always exists, which, if not superseded by another action, will soon pervert the harmony of the animal economy. In cholera such a state of things invariably exists, and what agent do we possess that can produce a specific effect on the vital system so speedily and so beneficially as mercury? In the treatment of syphilis do we attend to symptoms when we salivate? The same question is applicable to iritis, peritonitis, and every other acute inflammatory disease which has its seat in a vital part, and why should not cholera come under the same rule?

That salivation of cholera patients is attended with the happiest effects will soon appear evident to every one who may adopt it. From experience I find that ʒss doses of calomel act in nine cases in ten like a charm. They allay the vomiting and purging, cause a return of heat to the skin, then a profuse warm perspiration, and, subsequently, a gentle and refreshing sleep. In very violent cases I have given 120 grains of calomel in three hours, as well as had ʒij of the *ung. hydr. fortius*, rubbed in without any ill effects appearing at a subsequent period, such as violent ptyalism. I state this, in order that the numerous readers of The Lancet may not be alarmed in pushing the mercurial plan to a considerable extent in the treatment of cholera, for unless they put a speedy stop to its action, the system will be soon worn out, and death be the result.

Sols Row, Hampstead Road,
Aug. 1, 1832.

TREATMENT OF

MALIGNANT CHOLERA.

Stimulants injurious.—Efficacy of Calomel and Counter Irritants.—Danger of Bleeding; &c.

To the Editor of The Lancet.

Sir,—Having seen a good deal of cholera, and attended to the post-mortem appearances presented in about twenty cases, I am induced to make the following remarks, which you may perhaps deem worthy of a place in your journal. I would particularly caution against the use of stimulants, those who may not have seen their effects in this dreadful malady. The great prostration of strength, the small, frequent, feeble pulse, the short breathing, and the paralised state of the vital powers, indicate the use of stimulants, but their extensive exhibition has only shown their total inefficiency; nay, I would even say their injurious effects, for I have seen brandy and carb. ammoniæ given in very large doses, and after each dose there was a decided depression of the vital powers. However much this may be opposed to generally-received opinions, I have no hesitation in stating it as a fact, calculated to prevent a mode of treatment plausible enough in theory, but practically bad. On the commencement of an attack of cholera, while the pulse is pretty strong, the cramps not severe, and oppression not great, a few doses of calomel and ext. hyosciami, followed by a little rhubarb, or a small bleeding, will very much mitigate or cut short the disease; but when collapse has existed for six or eight hours, and the pulse cannot be felt at the wrist, when the

breath and tip of the tongue are cold, and when the surface of the body has a cold inanimate feel, and the eyes are much sunken and have a glassy appearance, medical treatment becomes useless, for the patient's fate is sealed in a very few hours. Cases neither so slight as the former, nor so hopeless as the latter, very frequently occur; in such cases, the treatment I should recommend is the following, and if actively and assiduously enforced, it will be productive of the happiest results:—The body should be enveloped in warm blankets, heated air applied to the surface of the body, and if the dejections be frequent, an enema containing tinct. opii and tinct. catachu, each a drachm, should be given, while the irritable state of the stomach is best allayed by effervescing draughts, containing an excess of alkali; but these are only auxiliaries to counter irritation, and calomel and ext. hyosciami, given in an almost unlimited quantity; 8 grs. of calomel, with the same quantity of ext. hyosciami, should be given every two hours, gradually diminishing the dose, or extending the period between each dose; at the same time extensive irritation must be produced on the surface of the body: this may be difficult to obtain, but no means should be untried, for the patient's safety very much depends upon it. Common blisters are not sufficiently active. Sinapisms, heated almost to scalding, may fail; even hot spirit of turpentine may not produce the desired effect, but a compound, containing equal parts of spt. cornu. cervi, and ol. terebinthinæ, with a sufficient quantity of pulv. cantharidis to form a semi fluid, will scarcely fail to produce redness, heat, and vesication, if the parts be well rubbed with a piece of flannel dipped in it; the irritation should be kept up by occasional rubbing, until the constitution begins to rally. The legs are the most convenient seat for irritation, and may be the most useful, from their distance from the seat of oppression. Other parts of the body should be rubbed occasionally, with spt. camphoræ, containing a drachm of camphor to an ounce of spirit; so soon as reaction commences, calomel and antimony must be given in small doses every four or five hours, and bleeding to a considerable extent will be almost always necessary. If local determinations take place, leeches must be applied in large numbers, with blisters and cold lotions.

Cholera appears to me a *congestive* disease, and in the early stage as much subject to proper remedies as any other severe complaint. Whether the diarrhœa, which, with scarcely an exception, precedes the symptoms of collapse, be considered the first stage of cholera, or as a distinct affection producing this disease by the excessive draining of fluids from the body, I am fully convinced that no bad symptoms follow when it is treated in the manner noticed above. The symptoms during collapse, and appearances on dissection, prove the unequal distribution of the blood, and congested state of internal organs; the quality of the blood is also depraved, but it seems to me that no change in its properties can materially benefit the patient, until the balance of the circulation be restored. This, then, should be the great object of our remedial means, but it cannot be accomplished by the means usually had recourse to. When a vein is opened, or a stimulant given, in common congestive fever, or the cold stage of intermittent fever, determination takes place to the surface, and the action of the heart is increased; but in the collapsed stage of cholera, even a small bleeding cuts short the thread of life. From a bleeding to the extent of four ounces, I have known the small feeble pulse become imperceptible, the features shrink fearfully, the patient gradually sink under the use of powerful stimulants, and death follow a few hours after the bleeding.

The severity of the stage of excitement is proportionate to that of the stage of collapse, and is much more fatal in young than in elderly subjects, probably from the greater activity in the vascular system of the former. Sedative means must be very freely had recourse to as soon as reaction appears. Tart. antimonii will then be found a valuable remedy, but not sufficient of itself, for I have never seen a case without determination either to the head, chest, or abdomen. The head is the most frequent seat of increased action, which can be reduced only by bleeding almost to death's door, cold lotions, and counter irritants; these last should never be applied to the head, but to the neck, chest, or extremities. Two or three dozen leeches will be found most useful in removing abdominal congestion. Although the successful result and appearances on dissection fully justify the above treatment, the pulse will seldom indicate bleeding, for it is generally small and weak; indeed a moderately strong pulse should be considered a favourable symptom. In conclusion I may state, that the treatment recommended above is founded on observations made in an ample field, and on the *post-mortem* appearances presented in a great many cases. I am, Sir,

Your obedient servant,

An Assistant-Surgeon, R. N.*

Woolwich, 24th July, 1832.

* Our correspondent has forwarded us his name and that of his ship.—Ed. L.

CLINICAL LECTURE

BY

JOHN ELLIOTSON, M.D., F.R.S.

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF MEDICINE

IN THE UNIVERSITY OF LONDON,

Delivered April 16, 1832.

PURPURA HÆMORRHAGICA.

The first case, Gentlemen, of which I will speak, is that of a woman who laboured under purpura hemorrhagica, who was admitted on the 22d of March, and of whose case I spoke in the first clinical lecture after her admission. I stated that the discoloration was particularly great upon her legs, so that they were stained in large patches, and had just the appearance of what have been called *claret marks*.

Treatment.—I mentioned that the treatment would be antiphlogistic, that she had been bled to eight ounces, that colchicum had been given, half a drachm of the wine three times a day, and that she had been put on milk diet. Under this treatment she got perfectly well. The effect of the treatment was I think decided; there can be no doubt that the amendment was owing to it. She had been in this way some time, and had not been mending, but on the contrary getting worse every day up to the time of her admission; yet in a few days, at least on the 27th, having been admitted on the 22d, the spots began to fade, and on the 30th disappeared entirely from the body, and a brown mark only remained in the legs where the patches had been considerable, so that she almost instantly began to mend, and was presently perfectly free from the disease. She now appeared pale, just as persons are who do not make sufficient blood, or blood of a sufficiently rich quality, or who have lost a great deal of blood. I then ordered her the tartrate of iron, half a drachm three times a day, but it rather purged her, and on that account the carbonate of iron was substituted for it, and she soon left the hospital perfectly well.

It is an interesting case on account of the nature of the disease, which is not one seen every day, although it is frequently seen, and it is one the pathology of which is obscure. I do not pretend to know anything about it, but it is an affection in which antiphlogistic treatment is generally required, though, occasionally, treatment of an opposite kind is demanded.

INFLAMMATORY LEUCORRHŒA.

The next case of which I will speak is one of inflammatory leucorrhœa. This was a single woman who had been confined seven months since—a thing very possible, although perhaps not much to her credit.

Subsequently to her confinement she was attacked with pain in the right hip, the abdomen was tender on pressure, she had a copious discharge from the vagina, pain in making water, and so on. It appeared to be inflammatory leucorrhœa or gonorrhœa, I do not pretend to know which.

Treatment.—She was bled to twelve ounces at first, and purged every day, and then twelve leeches were applied, and so on, till nothing remained but a considerable discharge, and the time had arrived for applying astringents. The treatment of a discharge from one mucous membrane is exactly the same as the treatment of discharge from another, so far as circumstances will allow of it. If a discharge from a mucous membrane be accompanied with heat and pain, it would be absurd for the most part to apply astringents, for they would do no good. If you could check the discharge of fluid from the vessels, but did not remove their inflammatory condition, you would stop the discharge for a time, and increase the inflammation by increasing the congestion. The proper treatment, where there is inflammation, is not to attend to the discharge, but to use antiphlogistic means; and when the inflammatory symptoms have gone off, the discharge will frequently cease spontaneously: but if it remain afterwards, then it is right to apply astringents.

Now, in cases of discharge from the vagina, I do not know so good an astringent generally as the nitrate of silver. It was commended much by a surgeon of the name of Jewell, and in consequence of his recommendation I have frequently employed it. In this case the injection consisted of one grain to three ounces of water, and the effect was speedy. Although a discharge continued some time after the antiphlogistic measures were employed, yet it presently diminished by means of the nitrate of silver, and so rapidly, that there was no occasion to increase the strength of the injection, and the patient went away perfectly well, supplied however with a quantity of the injection, because, if the medicine be not used some time after the disease has ceased, in many instances this will return. I sometimes employ the nitrate of silver in as large a quantity as a grain to an ounce, but it is better to begin with a quarter of a grain to the ounce, and it is very easy to increase it. Although it is easy to decrease it when it is too

strong, yet you have an unpleasant effect produced, which may not cease immediately. You may increase it without inconvenience, but an excessive strength is attended frequently with considerable inconvenience; for notwithstanding you decrease the quantity, the effect may continue. You will find this an excellent injection, one which is frequently far more efficacious than any other—at least in the case of the vagina.

CHLOROSIS.

The next case to which I will advert is one of chlorosis, and is very interesting, both on account of the severity of the symptoms, and the cure which was effected.

This girl, labouring under chlorosis, was almost as white as snow, but, strange enough, her Christian name was Rosa—Rosa Barclay. It ought rather to have been Lily—Lily Barclay. She was eighteen years of age; her countenance was pale and sallow, chlorotic, and her eyes were pearly, with a dark circle around them. She was so weak that she was scarcely able to support herself, and she had had no catamenia for nine months. During that time her health had been declining, and she complained of pain of the chest, pain of the abdomen, pain of the loins and legs. You know that the character of chlorosis is anæmia, want of blood in the system, blood of an imperfect quality, with few red particles and little fibrin. There is very frequently œdema of the limbs, sometimes of the face, and all the symptoms of anæmia, such as palpitation of the heart (the heart having so small a quantity of blood to circulate, and that of so light a quality, it acts easily and violently, and therefore you have palpitation on the slightest causes), dyspepsia, frequently costiveness, extreme debility, and a want of the menses; the menses may never appear, or, if they appear, it is only in a slight degree.

Now, with the exception of menstruation, this is a state that will occur in males. You sometimes see young men fall into the same condition—pale, bloodless, and weak, with every symptom except those that depend on the uterus, so that we are not justified in considering this a disease of the uterus. I believe we ought rather to say the uterus cannot perform its functions, on account of the deficiency of power in the whole of the system at large, the deficiency of blood.

Treatment.—Now this girl had been under treatment, but the usual remedies proper in these cases had not been adopted, and she was no better. I mention this, because she got well under the treatment employed here; and as another mode had been had recourse to without benefit, one may fairly ascribe her cure to what was done here. Her pulse was quick and irregular, and I ordered her a drachm of ferrum tartarizatum three times a day, and found her improving fast. On account of her bowels being confined she had a dose of calomel ordered her by somebody, with hydrarg. c. creta, and effervescing draughts; but I did not find this answer, for when I saw her again on the 24th she was nobetter, and a degree of bronchitis came on, in addition to which she talked incoherently, so that it was thought advisable to put a blister on her chest, a blister on her head, to take off meat diet and substitute milk in its stead, and treat her as labouring under inflammation without power: for she appeared to be suffering under bronchitis, with a degree of inflammation in the head. At last she had a hectic look, and such a change took place that she appeared sinking. I therefore ventured to give her half an ounce of wine every eight hours, sulphate of iron, and mutton chops, every day. Some tenderness of the abdomen came on, for which a blister was applied, and then purging ensued, so that it was necessary to give her catechu. She sweated profusely at night, her pulse was 160, and she took half a grain of muriate of morphia every night, persevering with the iron and mutton chops. On the 15th she was stronger, and on the 29th, as she proceeded too slowly, the iron was increased to three times a day, and the wine to four ounces a day, and she then improved rapidly, and got completely well.

She was presented before I wished, because, although she was well, I was anxious that she should remain in the hospital some time, that her strength might be quite re-established. But she desired to go out for the purpose of presenting herself to the committee of the Magdalen, having been a naughty girl. Our pity, however, was greatly excited by hearing that an old woman in whose establishment she had been, came to the hospital, pounced upon her, and took her back to her house to engage her again. From the pity excited on her behalf we were going to endeavour to trace her out, when it appeared that she had sent for the old lady herself, and entered her former line of life voluntarily. Such an occurrence as this is almost enough to make one weary of well doing.

BRONCHITIS — DISEASE OF THE LEFT VENTRICLE OF THE HEART.

The next case among the women, was not one that terminated so favourably as the three I have now mentioned. It was a case of sudden death in an old woman, who came in with anasarca. She was admitted on the 29th of March, ætat. 66.

The symptoms were, anasarca, especially of the lower extremities, which were distended to an immense size. She stated that she first observed this swelling five weeks ago. Before its appearance she was troubled with pain in her legs, but she made no complaint, and said her health had always been good. On examining the chest, which one ought always to do as well as the abdomen, in cases of dropsy, there was discovered sibilous rattle. She had bronchitis, and a loud bellows sound was heard in the region of the left ventricle, at the moment of the impulse of the heart, at the contraction of the ventricle; it was therefore clear, that there was an obstruction to the course of the blood from the left ventricle.

Treatment.—I ordered her to lose a little blood, eight ounces, and to be purged well with elaterium. I gave her half a grain every day, but it purged her so little, that it was increased to a grain. The swelling of the legs became less, but it would have taken some weeks to get her into a condition fit to leave the house, and then she never could have been cured. About twelve o'clock on the 8th of April, she complained of pain in her limbs, and in the morning she suddenly became speechless, and remained in that state till half past twelve the following day, and died before I arrived. I presume she died through some affection of the head, but I do not know. I should have supposed it was syncope, and that it arose from disease of the heart, but from the length of time she lay in the state I have described, I imagine that she died from something wrong in the head. As I found considerable disease at the beginning of the aorta, it is very likely that similar disease had taken place in the arteries of the head, and caused an effusion into that organ; but not knowing at the *post-mortem* examination what had occurred, the head was not examined.

There was found some slight inflammation in the small ramifications of the bronchial tubes; they were filled with mucus. But on examining the heart, the aortic opening was found contracted, a circumstance which I expected on account of the difficulty in the transmission of the blood, shown by the loud bellows sound at the moment of the pulse,—at the moment the heart struck against the side. There was a bony formation below the valves, the valves themselves were sound; the arch of the aorta, and indeed the whole of the aorta, was in a very diseased state, the inner membrane being partially destroyed, and the surface studded with bony deposits. The valves themselves were sound enough to play: they could prevent the blood from rushing back into the ventricle. If they had been so diseased as to have allowed the blood to rush back, no doubt the bellows sound would have been heard also after the pulse when the ventricle dilates again. There was a bony ring all around their base. Though she fancied she had been ill only so a short time, yet this disease must have existed for a long period. The whole of the aorta is diseased. You see another exemplification of the fact, that the left side of the heart is generally diseased, and not the right. Here are the pulmonary valves and the pulmonary artery all in a state of disease; but the pulmonary artery is affected in the slightest possible way compared with the aorta. The branches coming from the aorta are diseased. Here is the innominata also in a state of ossification. Here is the thoracic aorta and the abdominal ossified down to the bifurcation. The iliacs are all ossified also.

There is nothing important in the uterine system,—nothing that could have done harm; but there was a disease there which is very common, namely, a white fibrous tumour. It is very common to see white firm tumours on the outside of the womb under the peritoneum, likewise in its substance; sometimes indeed within the cavity: that, however, is not so common. But here is a tumour outside the womb, under the peritoneum, at the top of the fundus. You may see the white fibres in it now. It was quite white when the parts were first removed, not being dyed with blood, but you may still see it to be white. Sometimes you see several such tumours, and occasionally they make the womb very large. True scirrhus rarely makes the womb large; you may feel it sometimes above the pubes, but in general it is not very large, whereas these tumours may make it of an immense size, but that will be attended with no pain, and no disturbance except from the bulk. There is something pretty here—a young polypus, no larger than one of the fringes under the tongue. You know that polypi most frequently come from the neck about the os uteri, and here is one immediately above the os uteri, a little growth of the inner membrane, and which, had the patient lived long enough, would have grown and become large. As a great tree will come from a small shoot, so this in time might have been a source of great trouble; it might have dragged down and required a ligature. It is at present in embryo, an innocent little polypus.

The liver was of singular form; I never saw anything like it before. For about two inches in breadth the whole margin was turned completely up, and there was a sharp line between these two inches and the rest of the liver, so that really a long channel was formed between the convex surface of the liver and the two turned-up edges.

Such an obstruction to the course of the blood in the aorta at large, and particularly at the mouth, of course, threw too much blood on the lungs, and caused a difficulty in its return to the rest of the body, and therefore it is no wonder that œdema came on; but notwithstanding all this, there is no hypertrophy of the left ventricle: it is not thicker than it should be, nor dilated.

INFLAMMATORY HEADACHE—INFLAMMATORY EPISTAXIS.

In regard to the men, one was presented who laboured under inflammatory headache, and another under inflammatory epistaxis.

Case 1.—The symptoms in both these people were of course very much alike. There were inflammatory symptoms in the head in both cases, but with other symptoms additional in both. With respect to one, besides the inflammatory headache, there were signs of paralysis; both the hands and the feet were benumbed. I believe that when the feet only or the legs only are benumbed, that in the greater number of cases the cause resides in the spinal marrow. In almost all the cases of paraplegia that I see, the cause is in the spinal marrow. But when I see the hands and feet affected, not the whole of the upper extremities and the lower, but merely the hands and feet, I think in the greater number of cases you will find it depend upon some disease in the head, generally by distended vessels, compression; and these are cases that generally depend on simple compression, without organic disease, and are relieved very much by bleeding. That was the case in this man. This man, who was a barge builder, had been ill for six weeks with numbness of the hands and legs, frequent vertigo, dimness of sight, and pain in the head.

Treatment.—He was bled to 20 ounces, put on slops, and had five grains of calomel every night worked off with salts and senna in the morning. This was on the 9th. On the 14th he was bled again to 20 ounces; on the 16th to 20 more. The calomel by this time had made his mouth tender; and as there was still some pain of the head and some giddiness, 20 leeches were applied to the head and repeated every other day. Under this treatment he got well; the symptoms in the head ceased; the giddiness, pain of the head, and numbness of the hands and feet, also disappeared. The latter is an occurrence commonly seen. A great number of cases of numbness of the hands and feet depend upon mere fulness of the head, and may be removed by such means as these. The treatment consisted of low living, starvation; 60 ounces of blood were abstracted in a few days, and then leeches were applied repeatedly.

Case 2.—In the man, however, in Jacob's Ward, there was no numbness, but a discharge of blood. The other was a case of inflammatory paralysis, but this was a case of inflammatory hemorrhage. Both these were instances of an inflammatory state of the head; but the one was attended by paralysis, the other by hemorrhage.

This man was twenty-eight years of age, and was a coal whipper. He was a stout athletic Irishman, of florid complexion and sanguineous temperament. He said that ten years before he had been struck on the nose. The former case arose from an excess of blood in the head, but this owed its origin to mechanical injury, and it shows how long, after it has been inflicted, mechanical injury of the head produces its ill effects. Ten years before, this man was struck on the nose, and profuse hemorrhage—epistaxis—followed. He supposes that he lost a pint of blood, and says that the bleeding returned on three successive nights following the injury, so that he lost altogether a large quantity of blood. On the Friday preceding his admission (he was admitted on the 14th) he fell on his nose again, and profuse bleeding ensued, which returned each night till he was admitted. He says, that ever since his first attack, now ten years ago, he has been subject to headache and swimming of the head. He says that he has been much addicted to the use of spirituous liquors, and that he has likewise drunk a large quantity of porter. This is common with all coal-whippers. He says that the nature of his occupation rendered it necessary; that the labour is so severe that he was obliged to drink a great deal, and that he was obliged to spend not less than 14s. or 15s. a week in the purchase of drink. He has, however, been in the habit, he stated, of taking much more than this sum would afford him, and sometimes he has taken in a day three gallons of porter, and at least half a pint of gin. He says that his employers forced him to take that quantity for the purpose of supporting their connexion with different public houses, the masters of which in return procure them customers. The labour that these men undergo, requires them to eat a great deal and to drink a large quantity, but such malt liquor as porter is very good for them, — infinitely better than spirits. These men have no stated wages, but are paid in proportion to the work they do, which excites them to do a very large quantity, and they necessarily drink in proportion. But besides the quantity of drink which this labour would require, and the additional quantity which the extraordinary labour to which they are sti-

mulated requires, they are absolutely obliged to drink in order to get employment, because the persons who send coals to London, or who bring them for the purpose of sale, are usually patronised by public-houses, which find them customers, and enable them to dispose quickly of their cargoes; and then to oblige these public-house keepers, the coal-sellers will employ no poor men as coal-whippers who do not spend freely in public-houses. This is certainly a very cruel system, and a very great disgrace. This was as fine a man as you ever saw, but if he continue in this line of life, he will inevitably fall a victim to it, and will die of dropsy or liver disease, or some form of structural disease of the head. He said that the system of the coal-sellers and public-house keepers was abominable, and the destruction of poor men like him.

Treatment.—This patient was bled to 16 ounces, and salts and senna were given him every day; a cold lotion was applied to his nose also, and to the whole of his head. Some pain still continued, and on that account a blister was subsequently applied to his head: he was kept of course on low diet. No return of the hemorrhage took place; the headache and giddiness greatly diminished, and he went away very well, excepting some little headache and giddiness, which will doubtless remain. It was lamentable to think, that on returning to his occupation he would to a certainty fall into the same condition that he was in before.

HYPERTROPHY OF THE LEFT VENTRICLE OF THE HEART.

There was likewise presented a boy who came in with hypertrophy of the left ventricle of the heart. It was the case of which I spoke in a former clinical lecture.

Treatment.—By persevering in the use of colchicum, and the application of leeches from time to time to the region of the heart, keeping him still, and restricting him to low diet, the symptoms yielded so much that he was anxious to go out. Of course he was not well; but if he continue such treatment as was adopted here, and remain still for a year or two, it is possible that the condition of the heart may become much more improved than it is now.

PHTHISIS.—INHALATION OF TANNER'S LIQUID.

There was likewise a man presented with phthisis, to whom no medicine was given, but in whom a trial was made of the inhalation of tanner's liquid. I have perseveringly tried for a year and a half, or more, the inhalation of iodine and the inhalation of chlorine, but I have never seen a case of phthisis cured by either. I have seen great temporary relief afforded, but I have never seen a single cure effected by them any more than by other measures which have been adopted. I have heard of the atmosphere in the neighbourhood of tanners being considered favourable to phthisical patients, and as there are such simple modes now of making patients inhale air impregnated with different things, I thought if a patient were made to breathe through tanner's liquid, and any benefit could be derived from it, that would be a way in which it might be obtained. This man inhaled it, and found a great mitigation of his symptoms—quite as much as, nay more than, in cases where I have employed chlorine or iodine; but unfortunately he caught cold, through the windows being open, and it was necessary to treat him antiphlogistically and get rid of the bronchitis. He then inhaled again, became better, and felt a desire to go out.

I have never seen a cure effected by this tanner's liquid, but I have seen a great mitigation of the symptoms, and in chronic bronchitis more than in phthisis. In bronchitis, where the inflammation is not violent, where there is more irritability of the membrane than anything else, and profuse discharge, I have seen great good done by it. It can do no good where the inflammation is severe. There is a man now in William's Ward with chronic bronchitis, who has experienced great relief from breathing for twenty minutes, three or four times a day, through a hot solution of tanner's liquid. Whether a decoction of oak bark alone would answer an equally good purpose, I do not know: for as the air in the neighbourhood of tanners has been so much praised, I thought it better to order tanner's liquid. It is, however, so offensive in its nature, that some people will not use it at all, especially ladies, and some are made sick by it; but as a means of mitigating phthisis it is likely to be useful; beyond saying this, I dare not speak. I intend, however, to ascertain whether breathing through mere decoction of oak bark, or Peruvian bark, may not be as serviceable.

Concluding Remarks.

If I deliver any further clinical lectures, you shall have due notice, but I have now given them for six months, and as there are three physicians attached to the hospital, I have contributed my share of clinical instruction. I know, that when the fine weather has set in, it is tiresome to remain in town and hear clinical lectures, but if any cases should occur in the course of the summer on which gentlemen wish to have a clinical lecture, I shall feel great pleasure in complying with their desire. (*Loud applause.*)

CASES OF

MALIGNANT CHOLERA

TREATED BY

VENOUS INJECTION.

By G. F. GIRDWOOD, M.D., *Islington*.

SIR DAVID BARRY having expressed strongly his wishes that I should communicate to the Central Board of Health the result of my experience in the treatment of cholera by venous saline injections, I have made out a list of the patients thus treated, their residence, their ages, the date when done, and the quantity of saline fluid used. My own sense of duty towards Dr. O'Shaughnessy and Dr. Latta would have induced me, of my own accord, to make public my success, and I only waited till further experience enabled me to make my communication more worthy of the authors of this new mode of treatment than it is at present.

The first five cases in the following list were all of them under my own care.

Taken ill.	Name.	Age.	Residence.	Saline Injection used.
June 25 ..	Thomas Jones..	45	69, Harrow Road	4½ Pints
July 7	B. Conolly	35	27, Princess Street	2½ ditto
— 13 ...	Pat. Kelly	30	Workhouse	4½ ditto
— 13 ...	Mrs. Kemp	63	5, South Wharf Road	3½ ditto
— 24 ...	Miss ——— ..	65	———	4 ditto
June 30 ..	Mrs. ——— ..	32	39, Bell Street	5½ ditto
July 19 ..	Mrs. Moore....	42	8, North Wharf Road....	6 ditto

CASE 1.—Was a man of very dissolute habits. He was employed on the roads. For a week he laboured under premonitory symptoms. I entertained no very sanguine hope of success, but had recourse to the venous injection as a last resource. His pulse was nearly gone. He was voiceless. The cramps were most violent. The vomiting and purging incessant. The breath and tongue were cold, and the surface of the body was cold and clammy. The operation was performed at eight in the evening. It occupied forty minutes. The violence of the symptoms subsided as by magic. The cramps instantly ceased. There were but two very slight attempts at vomiting after the operation. There was no longer any purging. The patient described the operation, in his own words, as being "very nice." It was as if something was thrilling all over him. After four hours great *heat* and *restlessness* he dropped asleep for two hours, and during the night had some refreshing slumber. He complained in the morning of nothing but weakness.

He returned to his usual occupation in two days after. Four days after he had been at work, he came to me. His legs were slightly œdematous, but the swelling speedily subsided under the administration of sweet spirits of nitre and digitalis.

CASE 2.—Is that of an Irishman who had partaken freely, the night before I saw him, of bacon and peas and porter for supper. At three in the morning he was attacked violently with the usual symptoms of cholera. I was called to him at eleven. He was then not so far gone in collapse as Jones, but as I considered the benefit so decidedly advantageous in Jones's case, I did not hesitate a moment in making use of the venous injection in this case, before the collapse proceeded further. It was used. The instant the operation was finished, *he had a most violent rigor*. His features sank, his limbs shook, and his teeth chattered violently. The surface meanwhile became a deeper and a deeper blue. The friends were frightfully alarmed, and I confess I was not without serious apprehension for my patient, and some misgivings in my own mind respecting the propriety of my practice. However, the cramp, sickness, and vomiting, were gone. His hands and legs soon became warm, and in two hours he felt hot all over the body. He remained *hot and restless*, with occasionally a little sleep throughout the day. He complained much of pain in the loins; this pain increased so much, that at midnight I was awoke to relieve it. The camphor liniment, with laudanum, was freely applied to the back. In half an hour afterwards he made water—the first he passed from the commencement of the disease, and the pain in the back left him entirely. He remained weak for two days, but required no further medical treatment, excepting a small poultice for three days to the arm where the vein was slightly inflamed. (This is the only occasion on which I have had any annoyance of this kind after this operation.)

CASE 3.—Patrick Kelly, was a poor fellow who had been sleeping for some nights in the fields, and had been half starved. He was much in the same state

of collapse as Conolly. After the operation *he had a rigor*, though not so strongly marked as in Conolly's case. I now recalled to memory that Jones had, after the operation, felt cold. This circumstance escaped my notice at the time. Kelly was *hot and restless* for several hours. Nothing worth noticing occurred afterwards. I kept him till Sunday last in the workhouse. He then left perfectly well.

Case 4.—Mrs. Kemp, a poor woman who had been long an invalid. She was a cripple, and had been often under my care on account of chronic disease of the liver. She was attacked with the epidemic in a mild form on the 7th, and under the use of the saline treatment she had so far recovered, that I was visiting the patient only once a day. It seems that shortly after my visit on the 12th, she fell into a state of stupor. The surface became cold and clammy, and coloured of a dingy yellow. I was not informed of this state of collapse, and when I called next day, I found my patient dying. She was pulseless at the wrist. She could be roused for an instant to open her eyes. She would talk sensibly for a moment, and then drop into a state of lethargy. Without the slightest hope of advantage I used the injection. It brought back the pulse at the wrist, and heat to the surface. No other favourable symptom followed. She died fifteen hours after. I may remark that the collapse came on without any return of the vomiting or purging.

Continual vomiting and purging, highly characteristic of the disease, existed from the commencement of the attack up to the hour when the operation was performed.

Case 5.—Miss B., the last I have had in my own practice. She is 65, of a spare and delicate habit. She came in the morning of the 24th, from Brompton, to spend the day with a friend in my neighbourhood, who had just arrived from the country. She felt qualmish on her arrival. As she had occasionally felt so, her feelings did not alarm her, and her friends, whom she had not seen for years and to whom she was tenderly attached, attributed her uneasiness to the excitement of mind she felt on meeting them after so long a separation. Miss —— retired to bed for a few hours, meanwhile the symptoms became more and more declared. When I saw her at four, she was sinking into the state of collapse. Dr. Daun was sent for, and as soon as he arrived the operation was performed. This took place at nine in the evening; by this time the collapse was very great. The same relief as in the other cases was experienced. The cessation of vomiting and purging, the subsidence of the cramps, the restoration of the voice and looks, the return of the pulse, the rigor and the heat, and the restless following the shivering fit—the symptoms as already detailed in the other cases—occurred in this one.

It may be remarked, that no secondary fever occurred in the cases already detailed. Miss —— was the only patient who had it after venous injection. On the morrow after the operation the tongue was warm and dry, the pulse was not full, as it was immediately after the injection; great debility existed; she was much inclined to sleep. Several bilious stools were passed throughout the day and succeeding night. During the next four days this lady gradually retrograded; the diarrhœa continued, and gradually became of the colour of water, and she wasted in flesh; four or five stools on an average during the 24 hours. No urine was passed all the day after the bleeding; the sleep became more lethargic; the pupil contracted; the sensorium somewhat affected. She could sit up in bed and help herself to food, but would sit for a few minutes in a reverie, with the spoon filled and lifted half-way to the lips. She complained of flashes of light in the eyes; there was but little increase of heat over the head. On the morning of the 29th, a dozen leeches were applied to the head. The pulse this morning was much fuller than for the last four days. Miss — was relieved; ice was continued throughout the day to the head; a dozen and a half of leeches were applied in the afternoon; and finding considerable benefit from these two local bleedings, a vein in the arm was opened at midnight, and ten ounces more blood removed. This last bleeding gave the patient decided relief. She had an excellent sleep after, and was much refreshed in the morning. The pupil was now its natural size; the lethargy gone, and mind quite collected. She is now out of danger. This last case was one of great interest and much anxiety to me. I considered myself extremely fortunate in having Dr. Daun's great experience as a guide in the treatment of the secondary fever. As in all the cases of cholera that have come under my care (now upwards of thirty) I had not till now seen a well-marked case of it.

And now with regard to the internal treatment. In all these cases, as well as in all others I have had latterly under my care, I have used the saline treatment. The preparation I have found to rest most readily on the stomach, is the *subcarbonate of soda*. Of this salt I keep a solution prepared. The recipe is

Sodæ subcarb. ℥j;
Liq. opii sedativ. ʒss;
Sp. myrist. ʒss;
Aq. cinnam., Oiij. Mj.

Of this mixture a tablespoonful is given every half hour; and between each dose after the venous injection, a tablespoonful of brandy in a *little* hot water, until reaction be well established. Miss — took a pint and a half in this manner; the three others above half a pint. I consider it to be of the utmost moment to give these things regularly, and in these *small quantities*.

Occasionally the powder for the chalk mixture has been added to the above mixture in small doses. Occasionally the carb. ammoniæ in doses of five grains at a time.

Cases 6 & 7.—The two last on the list were patients of my friend and neighbour Mr. Stott. They had both been bled and treated with calomel and opium. Mr. Jones, my zealous pupil, saw one case. I saw the other. Both pulseless—both were rapidly sinking. Mrs. —— was so roused by the operation as to call for her baby, four months old; she sat up in bed and suckled it. For several hours she continued well, but gradually sank again into collapse, and died twenty-four hours after the operation. This patient I did not see, as I happened to be from home when Mr. Stott called. I performed the operation in Mr. Stott's presence on Mrs. Moore. The patient rallied amazingly for a few hours, but she too sank again into collapse, and died ten hours after the operation. She too had the *rigor* I mention as following the injection in the other cases. It was not followed by the heat so apparently as in the others. These two cases not having occurred in my own practice, I have requested Mr. Stott's permission to publish. I do not consider that the unsuccessful issue of either of them militates in the smallest degree against the operation. I relate them that they may act as a warning to those who wish to give this treatment any chance of success, not to allow the collapse to go on too far.

Remarks.

On comparing these cases together, I wish to draw the attention of the profession to two or three important facts.

Three of these cases recovered without secondary fever. At least the reaction that took place for a few hours scarcely deserves the appellation.

The case in which secondary fever came on was bled with the most decided advantage. The blood had the indications of inflammation to a high degree. This patient, it will be observed, was in years. How far this circumstance had to do with the induction of the fever in a *weak constitution* must be proved by future experience.

In all of them there were indications, after the operation, of the system having received a severe shock. In all more or less existed the rigor and the consequent heat. In those who recovered, this was most apparent.

Two of the unsuccessful had the *greatest* quantity of fluid injected. These two, however, were in a state different from the others; both had *taken opium*—both had been *bled*.

In three of the successful cases, no purgatives of any kind were administered; they were not required. The fluid used was of the nature and temperature adopted by Dr. Latta.

The apparatus was made on the spur of the moment. The brass nob of one end of my enema apparatus was cut off, and a silver blow-pipe introduced into the tube, air-tight. All that is necessary to secure the instrument from having air in it, is to force the fluid several times through it before it is used. Care must be taken not to lift the nose of the syringe out of the fluid when once the operation is commenced. As phlebitis has occasionally followed the operation, it is of great importance to handle the vein as delicately as possible. The neatest way of performing the operation, is to use the saphena vein immediately above the inner ankle. The tract of the vein being remarked by the eye, let an assistant push the blood upwards in the vein, whilst the operator's left thumb is on the vein, and below where the operation is to be performed. Cut with the point of the lancet a slit less than the fourth of an inch along the course of the vein. One or two scratches more with the point of the lancet will cut through the cellular membrane and lay the vein bare; the smallest puncture now of the vein to admit the end of the tube is necessary. No blood has flowed, and the end of the apparatus, all ready for action, is readily introduced into the orifice by the right-hand of the operator.

Of the four successful cases I have already mentioned, no inconvenience arose except in Conolly's case, where a little hardness existed for two or three days, and this I attribute to my own gaucherie. I opened the median basilic, and was obliged to cut twice.

From all I have said, I trust many may feel inclined to give this remedy a fair trial. It is a practice whose *immediate* advantages are as decided as the extraction of the tooth in toothache, the administration of opium in delirium tremens, or the free use of the lancet in peritonitis or pneumonia. In the meanwhile, until we know more about it, let it be considered merely as a temporary stimulus which, used with propriety, at least *does no harm*.

August, 1832.

TREATMENT OF THE

MALIGNANT CHOLERA

AMONGST THE SOLDIERS OF THE

2ND BATTALION GRENADIER GUARDS.

By J. HARRISON, *Esq., Surgeon 2nd Batt. Grenadier Guards.*

DIARRHŒA, with more or less of febrile excitement and gastric irritation, showed itself the latter end of April in the 2nd battalion Grenadier Guards; from this period till the beginning of June, when the regiment embarked for England, twenty-seven cases were treated in hospital, three of which number were distinguished by the symptoms of malignant cholera at that time prevalent in Dublin, characterised by vomiting and purging of a fluid resembling rice-water; great prostration of strength; a small, weak pulse, or one not distinctly to be felt; extreme coldness and livid hue of the surface of the body; contracted countenance; the sunken, dull, suffused eye; cold moist tongue; the peculiar voice; the shrivelled skin so strikingly observed in the hands. These symptoms were generally preceded or accompanied by vertigo and pain in the head; a total cessation of the secretions, cramps, and spasms; great anxiety, restlessness, thirst, sense of oppression, and burning heat in the chest.

Since our arrival in England, and being quartered in the Tower of London, 31 cases have been admitted into hospital, ten of which number were returned as well-marked cases of cholera; in the whole, up to this period, thirteen.

The plan of treatment adopted was, in the first instance, to administer a mustard emetic, which usually produced some reaction. If it failed to do this, and the pulse continued to sink, three or four ounces of blood taken from the arm seemed to relieve the circulation. Ten grains of calomel, with one or two of camphor, and one of opium, were now given every hour till the fourth dose, or if the stomach was very irritable, two-grain pills were preferred every ten minutes to the same extent of quantity. Camphorated mercurial ointment, with a small quantity of oil of turpentine, was assiduously rubbed into the abdomen, insides of the thighs, legs, and arms; heated sand-bags were applied to the extremities and sides of the body; mustard poultices and blisters to the pit of the stomach to allay the continued irritability of this organ. But the great object to be obtained was getting the system as speedily as possible under the influence of mercury, for it was observed that the least tinge of bile in the evacuations was a sure indication of the disease becoming subdued. Aperients were now given; rhubarb in peppermint water, or others of that class; cold, weak brandy-and-water given frequently in a tablespoon, to prevent a large quantity being taken at one time,—this for common drink; but when the thirst was very urgent, accompanied by that distressing sensation of burning heat in the chest, nothing appeared to be so grateful as iced water, or even a small lump of ice laid on the tongue.

Of these thirteen cases one proved fatal. In this instance the stage of collapse was fully formed when he was brought to the hospital, and although heat of the surface was partially renovated, re-action was never established. This man sank rapidly. Notwithstanding the large and repeated doses of calomel given (although not much of it might be retained), still the mercurial frictions were perseveringly continued, and chiefly depended upon, yet ptyalism to any great degree was in no one instance induced. Every case, however, was more or less affected. This mercurial affection of the sytem seemed to shorten and render milder the consecutive fever.

If this practice is deemed successful, there is a consideration to be borne in mind, which is, that soldiers, from their regular habits of living, and being well fed and clothed, are not a class of people one would expect to be great sufferers from cholera; and, moreover, the medical officer has a very great advantage over the private practitioner in the opportunity of treating the disease before it is much advanced, and also having all his remedies at hand, and all the assistance he can desire in their administration.

The above relation is intended to convey a well-grounded belief in the efficacy of the mercurial plan of treatment in cholera, and more particularly the application of mercury in the form of inunction.

Tower, August 7, 1832.

LETTER FROM DR. ANDERSON.

To the Editor of THE LANCET.

SIR,—I feel it necessary to set myself right with the profession and the public, as to some remarks made in a letter from Mr. Robertson, surgeon of the *Cumberland*, Convict Ship, at Chatham, published in your last LANCET; from which it might be inferred that in a communication I made to the Central Board of Health, and printed without my knowledge in a preceding LANCET,* I had intentionally suppressed or mis-

* The letter of Dr. Anderson was forwarded to us from the Central Board of Health, with the impression, undoubtedly, that it was a public document, and adapted for insertion.—ED. L.

stated the result of the three cases reported as convalescent. My letter was one of daily communication to the Central Board of Health, and not written with the view of publication, but to give an account to the Board of the progress of the disorder, and of the daily alteration we saw necessary to adopt in the treatment.

"Three additional cases were selected yesterday, and this plan of treatment adopted, and I am happy to add with most decided benefit. They are all *at this moment convalescent*."—LANCET, June 23.

In the three cases that I mentioned, there was, when I wrote, such a complete remission of the choleric symptoms, that I felt myself justified in considering them convalescents. One of the cases, Eccles, lived nine days, Longbottom two days, and Cooper is still alive. As the after treatment did not devolve upon me, I am unacquainted with the circumstances of the death of the two former; but had I written for publication, and after I was acquainted with the want of success which attended the practice of venous injection by Mr. Robertson, I should perhaps have written less sanguinely.

On again perusing my letter, I can perceive no more of the *exultation* of which he accuses me, than the gratification which every humane man would feel at the apparent confirmation of Dr. Latta's discovery of a remedy for this dreadful disorder.

It is to be remembered that the venous injection was employed in *those cases only* in which a fatal termination seemed almost inevitable; if, therefore, life is preserved in a single one of these cases, the medical attendant may be forgiven for a little *exultation*.

Having made the above observation, in reply to Mr. Robertson's remarks I have to state, that I am still of opinion that venous injection is a powerful means of cure, but I shall be inclined in future to bleed freely in the opposite arm, during, or immediately after, the process of injection, as the death of all the cases I witnessed after its use seemed to arise from cerebral congestion. I am, Sir,

Your obedient servant,

JOHN ANDERSON, M.D.,
Surgeon, R.N.

Rochester, Aug. 5, 1832.

LITHOTRIPSY.

REPLIES OF MR. RIGGS AND MR. GOODWIN TO THE LETTER OF MR. COSTELLO.

To the Editor of THE LANCET.

SIR,—The nature of Mr. Costello's last letter is such, that by publishing it I am afraid he will only add to the unfavourable impressions which his former ones must have left to his own disadvantage. The task of proving to Mr. Costello that he did not, quite so strictly as he should have done, adhere to truth, was so unpleasant, that I shall not enter into the contents of his last publication, or attempt to pursue the very handsome mode of reasoning which is there so eminently displayed.

I will merely make one observation respecting the letter which M. Arago, secretary to the Institute of France, addressed to Mr. Costello, announcing to him that his letter had been read in open Academy. M. Arago, without doubt, did write to Mr. Costello, but, in doing so, he merely discharged an official duty devolving upon him, which is nothing more than a well-known academical form, for it is impossible to tell the author of a letter, whoever he may be, that his letter was received, and, at the same time, that it was not read. The letter, as I before said (and I was well informed), was not read in open Academy; and Mr. Costello well knows that the *secretary* never reads letters of such length, even if the matter they contain be of the most interesting nature. The real fact is, that instead of being read, they were glanced into, and their contents being soon ascertained, they were sent to be perused by the committee selected by the Academy to examine Baron Heurteloup's labours in *lithotripsy*. It is impossible to say whether they have been or will be read by the gentlemen who form this committee, but I do not suppose that they require the assistance or advice of Mr. Costello to form an opinion on what is submitted to their inspection. With respect to the paper (the *Messager*) which Mr. Costello brings forward to prove that his letter was not only *read*, but listened to with the most *profound attention*; it merely proves that it was read by the journalist, who always, after a sitting of the Academy, peruses all the papers introduced, and publishes extracts from them. This is all that requires an answer in Mr. Costello's last letter. That gentleman would do far better to publish and substantiate by authentic proofs his numerous successful cases, than write long and unmeaning letters in which he so often contradicts himself, and which, as I before remarked, are

evidently not written "in a scientific point of view."

Before I conclude, I cannot omit complimenting Mr. Costello most sincerely on having *seen* the Baron Heurteloup's curved instrument (which unfortunately is not the case), on *possessing* it, on having *operated* with it, and, above all, on having so far *improved*, *modified*, and *strengthened* it, as to render it a safe and valuable instrument, and so all at once to have cleared it from the numerous reproaches and serious inconveniences, which but a fortnight or three weeks before he so strenuously heaped upon it in his letters to the Academy.

With respect to my youth, with which Mr. Costello so frequently finds fault, I am sorry that he should consider it a cause of offence. I will merely remark, that my youth can be no admissible reason why I should not write as well as speak the truth, even to my superiors in age and acquirements, should they place themselves in such a position as to require explanations and statements of facts to clear up their *ambiguities*, not to say more.

I have the honour to be, Sir,
Your most obedient servant,
THOMAS T. BIGGS.

Vere Street, Cavendish Square,
July 30, 1832.

NOTE FROM MR. GOODWIN.

To the Editor of THE LANCET.

SIR,—Mr. Costello has written in last week's LANCET a letter, in which he alludes to the statements that I have before given, and asserts, that my testimony and that of Mr. Hodges were offered in support of facts, which he for the second time treats as incorrect.

What other motive could I have had in giving that statement than the establishment of truth? And with the same object in view, I once more assert, that what I stated in my former letter was *scrupulously true*.

With respect to the letter bearing my signature, which Mr. Costello has inserted, I have not sufficient recollection of what I wrote to venture to speak of its authenticity; but it matters little, the fact subsists. Mr. Costello, I again repeat (and Mr. Hodges will feel pleasure in again certifying), operated upon me with the *lithotrite three different times, as stated in my former letter*.

With respect to any other observations in my letter, my object was merely to present facts as they occurred, and this I have done faithfully.

I regret much that it should be necessary for me again to appear before the public, in a controversy from which I would willingly have refrained. But my obligations to the Baron Heurteloup, and my sense of justice called upon me to take this step.

I have now spoken so decisively upon this subject, that I shall think it unnecessary, whatever answers may appear from Mr. Costello, to give any further reply to a subject on which your readers must, I am sure, be able to decide correctly.

I have the honour to be, Sir,
Your most obedient humble servant,
GEORGE GOODWIN.

Chapel-street, Grosvenor-place,
July 29, 1832.

[As it is quite time that this controversy should terminate, any other letters on the subject can only appear as advertisements on the cover.—ED. L.]

NEW MODE OF PREPARING

PURE SUGAR.

To the Editor of THE LANCET.

SIR,—I avail myself of the opportunity which your Journal affords, in occasionally inserting notices of scientific interest and inquiry, although not immediately connected with medical science, to announce to your readers a fact important both in a philosophical and commercial point of view, the preparation of pure sugar direct from the cane juice, without any subsequent process of decolorisation, solution, or refining.

Whilst this most important desideratum to the planter is effected, it must be considered a proof that molasses were but a product of the former mode of operation, from the intense and long-continued degree of heat employed in the processes, rather than an educt from the sugar cane, in which light it has been uniformly viewed by former chemists. The improvement of the present over the ordinary mode of operation, consists in effecting the last stages of concentration in a vacuum pan deprived of atmospheric air by means of an air-pump, the process which was first proposed by the Hon. Edward Charles Howard, and most successfully introduced into operation in the sugar-refineries of Great Britain, and by which the heat that is employed is not sufficient to produce any change in the constitution of the elements of the sugar. A concentration of the juice at the reduced temperature, required in the operation, effectually prevents the formation of molasses, and the sugar is preserved from undergoing that extensive partial change and decomposition in which it has ever

uniformly before been transmitted to our hands.

The sugar thus obtained is in perfect, pure, transparent, granular crystals, developing the form of the crystal of the sugar, and being entirely free from the least portion of uncrystallisable sugar, molasses, or colouring matter. Its taste is very mellifluous, and is not approached even by best refined sugar, than which it is more valuable for all purposes of solution or for domestic economy.

I have forwarded a sample for your notice and inspection, and for the information of your readers may state that samples may be had of Messrs. Oaks and Son, 97, Houndsditch, manufacturers of the apparatus, to which gentlemen, science is indebted for the successful and full development of the application of this process, the effects of which cannot but be most beneficially felt by all who are concerned in this interesting portion of colonial and commercial enterprise and production. I am, Sir,

Your obedient servant,

ABR. BOOTH.

July 25, 1832.

*** The sample of sugar which accompanied the above letter would fully bear us out in any compliment we might pay the article. The product shows that the process is perfect. *Apropos* to the manufacturers As infinitesmal proportions of copper are said to be contained in sugar, we should have no objection to the opportunity of submitting a score or two pounds to the process necessary for their detection.—ED. L.

THE LANCET.

London, Saturday, August 11, 1832.

IN No. 19 of the *Glasgow Medical Journal*, just published, there is inserted the Thirty-seventh Annual Report of the "Glasgow Royal Infirmary." From this document we select certain paragraphs, as containing matters which are not undeserving the attention of the profession.

The readers of THE LANCET need not be reminded of the unremitting constancy with which we have enforced the claims of surgeons in general practice to the confidence of the public. Had our arguments been founded on prejudice or false premises, they would have carried little influence with them into the ranks of well-informed society. But founded as they have been on a correct estimate of all the circumstances which build up the medical character, they have been duly estimated and acted on by all those individuals who have had an opportunity of perusing or considering them. Convinced, however, as we were, of the delusion which existed in the public mind as to the degrees of confidence which ought to be reposed in the members of the various branches of the profession, we could scarcely hope, and certainly did not expect, that the reform produced within so short a period would lead to an acknowledgment from the managers of the "Royal Infirmary of Glasgow," that "the number of acting physicians in that city had been lately so much diminished that the managers had neither the means of appointing a third physician, if necessary, nor supplying the place of either of the present ones, when prevented on account of bad health, or otherwise."

Thus then we have the strongest evidence in proof of the rapid decay of the DUBBERY SYSTEM, that system which, during so many centuries, has robbed ability of its merit, and industry of her rewards. The false, delusive, title of "DOCTOR," has caused the death of thousands; for the results of years and years of the most valuable experience, have been neglected and abandoned for the treacherous claims of a false and empty name. Until this journal was established, the public had no means of ascertaining what was the value of the title to confidence set up by the different branches of medical practitioners. Up to that period they had been taught by interested parties to believe, that "Doctors in medicine" were profoundly wise in the treatment of those maladies which afflict the human frame; that apothecaries or general practitioners, or, speaking more correctly, surgeons in general practice, were subordinate

members of the profession, who, in all dangerous diseases, were called on to submit with servile complacency to the mandates of individuals boasting the title of "Doctor."

The bubble, however, has burst, or, rather, *it has been cut open*, and the eye no longer gazes on the cameleon hues, reflected, at best, by nothing but an empty phantom.

With respect to acting physicians, the city of London is pretty nearly in the same state as the city of Glasgow. Gentlemen who may legally claim the title of "Doctor," have been compelled to enter the ranks of surgeons in general practice,—observing, correctly, from what was passing around them, that if they omitted to resort to such a measure of pretension, they would be compelled to sink into irremediable poverty and obscurity. The facts recorded in the second of the two following paragraphs, deserve the most deliberate attention, not only of the members of the profession generally, but of the governors of the whole of our great national hospitals.

"The number of acting physicians in this city has been, from what cause we know not, lately much diminished; hence the managers had the means, neither of appointing a third physician, if necessary, nor of supplying the place of either of the present ones, when prevented from attending on account of bad health or otherwise. The managers, therefore, after very mature deliberation, and being well advised on the subject, whilst they disclaimed all intention of passing over the present attendant physicians, did, on the first day of August last, on the motion of the Lord Provost, seconded by the Preses of the faculty of physicians and surgeons, enact, "That any gentleman who shall have been fifteen years in general practice, and who shall have obtained the degree of doctor of medicine previous to his election, shall be eligible to be physician to the infirmary.' This measure will secure a supply of medical attendants, and, we are confident, will neither injure the character of the establishment, nor be hurtful to the paramount interest of the diseased poor.

"The plan adopted for the establishment of clinical lectures, has, after two years' experience, been found to answer the intended purposes; and has, from the zeal and abilities of the lecturers, proved of singular benefit to the medical school. It is satisfactory for the managers to state to this court, that the result of the measure on our funds has turned out the reverse of the apprehensions which some persons entertained when the subject was under discussion; for, during the last session of the College, there has been received from the attending pupils, nearly the sum of nine hundred pounds; of which three hundred have formed the remuneration to the lecturers, and the remaining six hundred have been available to the support of the institution. The regulation, therefore, has brought an increase to our revenue, while at the same time it has served another public purpose—it has improved the infirmary as a school for medical experience, from which incalculable benefits will be derived to persons of all ranks, both in this and future generations."

The managers of the Glasgow Infirmary have not left the instruction of the students to be a subject for the amusement or caprice of the medical officers, but they have prescribed rules for that particular end, the observance of which they have strictly enforced on the part of all the official functionaries. How opposite is the government of the hospitals in this metropolis! *Here*, so far from there being any well-organised arrangement, the whole business exhibits a complete chaos. If we omit the services of some three or four hospital physicians and surgeons, the pupils who resort to the medical institutions of London for clinical information, leave the metropolis just as experienced as when they entered it, and no more. Deficiency of emolument these medical officers cannot plead as an excuse for deficiency of exertion, for the fees paid by surgeons' pupils to Bartholomew's Hospital, for instance, alone, for the practice of the hospital only—leaving lectures entirely out of the question—reach 4000*l.* annually, not one shilling of which is applied to the benefit of the patients! Yet in the Infirmary of Glasgow, where the duties are so efficiently and zealously discharged, 600*l.* out of the 900*l.* paid by the students, are appropriated, ac-

cording to the statement of the managers, to the charitable purposes of the institution. If the physicians and surgeons of the hospitals of London could feel any sense of shame, surely their cheeks would be crimsoned on perusing such a document as this. But, unhappily, blushing is not one of the characteristics of the cold-hearted, cruel Bats. English students may visit the establishments here,—disgorge from their pockets their last shilling,—labour zealously in the pursuit of knowledge,—study unceasingly,—and then receive, as their only reward, THE WORTHLESS LICENSE OF A TRADING COMPANY OF APOTHECARIES, OR the DESPISED DIPLOMA of a mercenary, monopolising COLLEGE OF SURGEONS.

We invite the attention of our readers to the cases of venous injection performed by Dr. Girdwood, and recorded in THE LANCET of this day. Of seven cases thus treated, five have been successful*; affording, thus, triumphant proof of the positively beneficial results of this novel and interesting practice.

The errors which medical men perpetually commit in their reasoning on the effects of remedies, are amongst the most egregious in the examples of the *non sequitur* species of logic. If in any given disease a dose of calomel, of julap, of asafœtida, be administered, and if thereafter the patient recover from his malady, straightway the professional casuist exclaims that the recovery has been a "cure," and that his remedy was the *cause* of the happy issue. Again, extending his inference a little wider, he argues that what *cured* A, will, to a certainty, *cæteris paribus*, exercise an equally sanitive influence over B. At last his generalisation reaches universality itself. How strict and sound reasoning of this description is, the following anecdote suffices to show:—

About four weeks since, the wife of a violoncellist, residing in one of the metropolitan districts, was attacked with cholera. The parish surgeon, a gentleman of known ability, and who had seen and treated nearly 200 cases, was called to her assistance. He arrived, saw her desperate condition, and sought the additional advice of the medical inspector of the division. The inspector came, shook his official head, and—the aid of a third and most experienced practitioner was invoked. A full consultation was held, and it was unanimously agreed that the case was all but hopeless. The unhappy female was cold, damp, and pulseless; she was blue, and voiceless, the evacuations were so profuse as to excite astonishment as to whence they came; in short, it was perfectly evident that if something were not done, she would die within the hour. At least so thought the three experienced attendants, for they proposed, as a last resource, the venous injection, then recently introduced for the treatment of the disease. The violoncellist at first consented, then wavered, and at last retracted his permission, and the medical men withdrew, deploring his unaccountable obstinacy. Well, strange to say, this woman, thus abandoned by her physicians, not only did not die, but actually made a more rapid recovery than is generally witnessed in the most trivial cases; and from the time of her abandonment till her freedom from danger, she took no medicine whatever.

Now, it is quite clear that had the operation been performed here, it would have been published as an example of the *successful treatment* of cholera by venous injection. And thus it is with calomel, and thus with rhubarb, and thus with the muriate of soda. Men systematise and conclude on facts, which, in reality, have nothing to do with the events on which they reason.

But the case is widely different, when,

* One case which was under treatment when Dr. G.'s letter was written, having since recovered.

in a *group* of half a dozen instances of marked and manifest severity, we find, at the same time, a diminished degree of mortality; and when, what is more to the point, we mark the *instant* amelioration of symptoms which follows the employment of the therapeutic agent. If, after a medicine is taken, hours elapse before improvement is perceptible, we are clearly not entitled to infer that the remedy was the cause of the improvement; but, on the other hand, when, in a plurality of cases, the cold become *instantly* warm, when the arteries of the pulseless *instantly* renew their beatings, and when the voice *immediately* returns, no other conclusion is left but that the change was the effect of the measure.

Having now before us the cases recorded by Drs. Latta and Girdwood, and bearing in mind how far the success of the operation depends upon the manual adroitness of him who carries it into effect, we feel that no amount of negative evidence could be sufficient to warrant the practitioner in withholding this last resource from his otherwise abandoned cases. The remedy is doubtless in many instances too weak to cope with the virulence of the disease. In many, however, it will succeed, and we are bound to afford our patient every chance that may exist, however slender even the probability of success may be.

We have received from Dr. O'Shaughnessy an account of his analysis of the blood, drawn in one of Dr. Girdwood's cases (Miss B), four days after the operation of injecting four pounds of water, two drachms of carbonate of soda, and three of muriate of soda. In the interval between the injection and the abstraction of the blood, the diarrhœa had continued, and no urine had been passed. The results are very interesting. The quantity of water in the blood was 778.76 per 1000, being exactly the natural or healthy standard. The quantity of colouring matter 124-51—of albumen 78.86, being also natural proportions. The quantity of pure salts was only 4.15, being considerably less than half the normal standard. The serum of the blood, moreover, contained the immense quantity of two grains and one-tenth urea per 1000 parts.

During the second irruption of cholera in London, the same gentleman has availed himself of the occasion to repeat his chemical inquiries relative to this disease, on a most extensive scale, and with a view, if possible, to decide the question, whether the alteration of the blood be primary or secondary, and to ascertain what are the conditions of the blood in the several *stages* of the disease. We subjoin the conclusions at which he has arrived.

1st. In the *premonitory* symptoms, no alteration of the blood exists.

2nd. In the cases in which the evacuations are trivial, and *cramps* form the prominent symptoms, the blood is also unaltered.

3rd. The alteration of the blood consisting in loss of water and saline matter, only occurs in the collapse cases *preceded* by excessive rice-water evacuations.

4th. This alteration of the blood gradually disappears, or increases, in the fever stage, according to the aggravation or amelioration of the symptoms.

5th. The quantity of *urea* in the blood in cholera is most remarkable in the secondary fever, sometimes amounting to 3 grs., in 1000, and bearing a strict proportion to the duration of the retention of urine. Dr. O'Shaughnessy has, however, reason to believe, that urea, in minute quantities, forms a perpetual constituent of healthy blood. He is, however, pursuing this branch of the inquiry farther.

6th. The blood of healthy persons resident in infected districts or houses, is not chemically changed in the least degree.

These results are founded on minute analyses performed on a great number of

specimens of blood. Full details will in due time be published in this journal. At present it suffices to say, that these experiments afford ample data for deciding on the perfect inapplicability of the "saline treatment" to the *premonitory* symptoms. They also decisively prove that the alteration of the blood is altogether *secondary*, and they show that saline substances cannot act as prophylactic or preservative agents, as some have asserted. We shall avail ourselves freely of these facts in a detailed review of Dr. Stevens' work, which we hope speedily to lay before our readers.

The cholera, we are happy to state, continues to decline in London and its environs. In some districts a considerable increase of cases took place on the 2nd inst., the day on which the great thunder-storm occurred. A similar increase of cases marked the 8th inst., the day on which the weather resumed the sultry temperature of the season. We repeat, however, that the disease is, generally speaking, on the decline. We derive our information on this subject from the best of all authorities,—the medical men attendant on the cases—and we offer our sincere thanks to the gentlemen who have so readily answered our call for information on this subject. We assure them we will not abuse their confidence.

EXECUTION OF DR. BOZZI GRANVILLE,

In the last number of the "Quarterly Review."

(From a Correspondent.)

This stanch anti-contagionist is utterly crushed in the last number of this Tory journal. The worthy doctor is treated throughout with the most biting irony. The wretched pamphlet which he published recently, and entitled "A Catechism of Health," has brought upon him this well-merited castigation. After ridiculing in a very happy style the pompous pretensions of this modest personage, the reviewer satisfactorily demonstrates, that although the title-page of the pamphlet in question indicates a fourth edition, that more than *one edition was never printed*. He next adverts to Dr. Granville's assertion, that his original work was completed *in a fortnight*; and that, consequently, three hundred and thirty-six closely-printed pages of a work, taking so universal a range over so extensive and complex a subject, was composed and written at the rate of *twenty-four printed pages per diem*; and that, too, during the *leisure hours* of a physician of "great public and private practice." What copying clerk could write with a rapidity equal to the inditing speed of this bibliopoietic physician! The reviewer subsequently intimates upon pretty strong grounds, such as the actual comparison of the two productions, that Dr. Granville's Catechism is nothing more than a plagiarism (verbatim et literatim) of the "Catechism of Health" of Dr. Faust, published in 1792, and translated into English by Mr. Basse. Some excellent specimens of intellectual pap with which the Doctor afterwards supplies his readers, are served up, well-seasoned with gall and wormwood. Since the days of Dennis, the literary sun has seldom shone upon such a merciless hanging, drawing, and quartering. The magniloquent Doctor is no more. His occupation's gone. In vain will the genius of impudence exclaim *Resurgam*.

WESTMINSTER HOSPITAL.

PUNCTURED WOUND OF THORAX.

George Garrot, a stout well-built fellow, about 30 years old, and evidently of hale constitution, was admitted on the night of the 21st June with a wound of left side. He had been fighting in a public-house of the vicinity, and during the struggle had received a stab with a knife between the seventh and eighth ribs, close on the confines of the præcordial region. On admission, the man was evidently under the influence of liquor, there was much anxiety of countenance, the respiration was accelerated, and the pulse irregular. The wound was linear without any angle, and the cellular membrane for about an inch round it was emphysematous. The patient complained of acute pain in the part, especially when he assumed the recumbent position. The stethoscope indicated nothing preternatural in the breathing, there was a loudness in the respiratory murmur occasioned apparently by the accelerated breathing alone, but it was everywhere audible. Percussion afforded no symptoms. There was, however, a remarkable irregularity of pulse both at the heart and wrist; the extent and impulse of the beat were natural, but there

appeared an uncommon audibility in its sound. *Venesection to 20oz. A strong purging draught immediately.*

22. During the bleeding the patient experienced relief, and was enabled to draw a tolerably free breath. Vomiting succeeded which benefited him materially. The action of the heart and arteries became regular, and he slept at intervals during the night. This morning pulse 86, breathing nearly natural, the emphysema has disappeared from the cellular membrane adjacent to the wound, which is clean, and shows a disposition to heal by the first intention.

24. The patient is convalescent; the wound has nearly healed. All the functions are tranquilly performed, but debility and pallor remain, the consequences of the debauch and subsequent depletion.

CONCUSSION OF THE SPINAL MARROW; PARAPLEGIA OF THE LOWER LIMBS.

David Spearman, a stout lad, 23 years old, was admitted on the 12th of July, having fallen from a scaffold at the New Palace, a height of sixty feet. When picked up he was found stunned, and brought to the hospital. When received he was sensible, and complained of general numbness, pain of loins and legs, and an inability to stand. No bones were broken; there was considerable tenderness in the lumbar region, and the sensation of legs and thighs was gone. He had likewise but little motive power in the lower limbs, and when attempting to bend them on the pelvis was obliged to raise them with his hands. Pulse about 80, irregular. Breathing accelerated, countenance anxious. *Venesection to 16oz.; saline aperient medicines.*

26. A reaction occurred, and was vigorously suppressed by antiphlogistic means. The venesection was thrice repeated, and the loins were twice freely cupped. The emunctories were soon restored, and the patient soon regained his power of sleep, and his appetite for food. He has been slow however in regaining the use of his limbs, which still feel numb, and cannot be removed without assistance; but the progress towards convalescence, though slow, appears to be sure. The action of the bladder was never in the least degree impaired.

FRACTURE OF CRANIUM, DEPRESSION OF BONE, TREPHINING; HERNIA CEREBRI.

Thomas Walsh, ætat. 27, a bricklayer's labourer, of stout build and healthy look, fell from the same scaffold at the same time as Spearman; he was picked up insensible. Soon after his reception in the hospital he became sensible; a tumour rapidly rose round the wound in the posterior part of the scalp; a fissure was detected running across the upper part of the occipital bone, and crossing the lambdoidal suture above the left ear. The irides acted naturally, the respiration and circulation were tranquil, and the intelligence unimpaired. He was bled to 20 ounces, lotions were applied to the head, and aperient medicines were exhibited.

13. The patient passed a tolerably quiet night, but he has a headache this morning. The pulse is 90 and hard, the eyes impatient of light, but the intellect is unclouded. Venesection to 20 ounces again. This afforded relief, and the patient fell asleep.

14. The lowering plan has been pursued till to-day, when the patient was seen by Mr. White and Mr. Guthrie, who for reasons which they did not explain, determined to trephine him. The scalp being incised freely, the posterior lip of the fracture was found depressed, and dipping under the anterior edge. In its course the fissure described several angles, and one or two of these were removed with Hey's saw, in order to afford room for the introduction of the vectis under the depressed bone, but all efforts in this state of things were found inadequate to raise it up. A circular piece of bone being taken away from the fixed bone, success attended at last the surgeon's attempt in replacing the dislocated portion of cranium, and the patient declared himself relieved by the operation. Lotions; low diet; soothing antiphlogistic treatment.

15. The patient is removed to-day to a large ward; irritability; pain of head; pulse 96, quick; venesection to 12 ounces.

17. The patient was relieved by the bleeding, and felt comfortable all day yesterday. This morning the wound of scalp, which discharges freely, has a slight prominence in the centre, indicating an incipient hernia cerebri. There are pain and sense of fulness in the head. Cupping from the temple to 12 ounces.

21. The abstraction of blood proved beneficial. The hernia, however, rose to some height in a day or two, and then sloughing, was removed by Mr. Taylor. An immediate amendment was perceived in the condition of the patient; he became placid, slept quietly, and the pulse fell to 88, becoming soft, though slight causes made it vary considerably.

29. The patient appeared much better for several days. The wound showed a granulating surface, and the brain showed no disposition to throw out a fungus till this morning, when a slight projection became visible; pain was felt in the part. The tongue became furred, the pulse accelerated, and general fever and irritation supervened.

30. Symptoms much aggravated. The hernia is as large as a small tea-cup; the patient pallid, breathing rapid and quick, as much as 30 per minute; expression of countenance cadaverous; pulse 100, strong, quick, and yet irregular. Cupping to the amount of 24 oz. from the temples; saline aperients.

31. Quieted by the abstraction of blood; at night, a portion of the slough removed by Mr. Guthrie. The anxiety of countenance is increased; breathing accelerated; pulse 90, irregular in force and frequency; bowels open; skin bedewed with cold perspiration.

We shall keep an eye on this case, which is now desperate, and look with anxiety for the surgeon's reasons in deviating from the established canons of surgery in the treatment. We trust Mr. Guthrie will favour us with a clinical lecture on the subject.

PARALYSIS—FUNGOID DISEASE OF TESTIS.—COINCIDENCE OF THE TWO AFFECTIONS.

Patrick Cormack, 35 years old, a paviour, admitted 5th of June, 1832. He has generally enjoyed good health. About a year and a half ago, he was seized with a fit which came on in the night, and deprived him of the use of his right side, and particularly the upper extremity. This attack was preceded by headache and vertigo, which have occasionally recurred since that time.

He has been a good deal addicted to venery, and has indulged in excessive potations of a promiscuous nature, frequently to the extent of intoxication. The present attack came on about a week ago, and affected the same side as before. The right arm feels much colder than any other part of the body. The right knee is tumefied, and gives a sense of fluctuation to the touch, but the whole of that limb retains its natural warmth. The testicle of the same side is much swollen and hardened, and he states that it also became so after the first attack. He has been under the care of Mr. White as an out-patient, who (according to patient's account) made an incision into the tumour, and let out a considerable quantity of pus. There is still a purulent discharge. The pain of head has lately been increased in severity. His memory is evidently impaired, and his answers are incoherent and indistinct. Tongue slightly furred; bowels open; pulse 88, full, and soft; appetite good. To be cupped in the nape of the neck to eight ounces. A quarter of a grain of strychnine to be taken three times a day.

10. He has a tickling sensation over all the surface of his body; pulse 100, full, and soft; tongue clean; bowels open; appetite bad. The affected knee is more easy. To persist with the strychnine.

12. Feels more lively. Can stand better than he did; has a little more power in his arm, which feels warmer. Complains of pain and giddiness of head. The knee much less swelled and less painful; tongue clean; bowels open; urine scanty; testicle much the same; pulse 84, full, and soft; cupping on the temples to twelve ounces. To continue the strychnia.

16. Complains of pain of left side, increased on inspiration, and exciting a cough. To this he has occasionally been subject for a year. Percussion gives tolerably laudable sounds in every region of the chest. Can expand the left side of thorax to its full extent, but has hardly any power over the paralysed side. The respiratory murmur is natural, but a slight râle sonore is heard in left lateral and posterior region. Has cough and mucose expectoration; tongue clean; bowels confined; pulse 96; makes water with a feeble stream; cupped to twelve ounces on the nape of neck; head felt lighter afterwards, but the noise in the ears was not removed. *A strong aperient draught to be given immediately.* Twelve leeches to be applied to the side, and the strychnia to be continued.

20. Has been cupped with benefit upon the affected knee. The pain of side occasionally returns at night; secretion of urine scanty. The bowels being very costive, have been acted upon by aperients. Tongue clean. The testicle still presents an indolent ulcerated surface, assuming a fungoid character in the centre. Persist with remedies.

July 2. Since last notation, no important variation of the general symptoms; pertinaceous habit of constipation. A tumefaction of the affected testis has taken place. The muscular power of the patient is manifestly improved. Has had a warm-bath, from which he derived signal relief; pulse 100, soft; testicle in *statu quo*.

6. Power increasing daily. Great difficulty in making water, relieved by the passing of a bougie. Pain of knee; ordered a tobacco poultice.

9. Pain of knee not relieved by the tobacco poultice; has more muscular power in the affected parts. The testis was examined this day by Mr. Lynn, who is of opinion, from the lobular shape of the tumour, that the disease is of a malignant kind, and should consequently be extirpated. Dr. Roe being of a different opinion, declined consenting to the operation, and determined to treat the case with alteratives; bowels open; pulse 80, full, and soft.

13. Has more power over the paralytic arm, but the pain of the knee has much

augmented; testicle smaller and hard; expels his urine with more force.

20. Dr. Roe has prescribed the iodure of mercury to the testicle, which appears improved; the general system is placed under a simple antiphlogistic regimen; pulse 90; bowels torpid. A strong purging dose daily.

27. The testicle is softer; a slough has separated from the surface of the ulcer, and healthy granulations remain; the iodure of mercury ointment has been continually applied. The paralytic affection is evidently improved; pulse 80, soft, and regular; low diet.

Aug. 4. The patient's appearance strikingly improved; his bowels act spontaneously; his face is acquiring a hygienic hue, his speech is more distinct, and his step more decided. The testis is reduced to nearly its natural size, and presents a healthy granulating surface. The surrounding tumour is entirely absorbed; appetite good; middle diet; pulse 80, soft, and regular, and the general opinion is, that he has sufficient springiness of constitution to throw off every vestige of disease.

LONDON HOSPITAL.

DISEASE OF THE HIP-JOINT.

H. A., aged 12, was admitted March 22d, under the care of Mr. Scott, with disease of the hip-joint.

The following were the appearances on admission. The patient, a delicate-looking girl, complained of great pain in the joint on motion. She lies in bed, with the knees drawn up towards the abdomen, and on drawing them down, she complains of severe pain. She has also one symptom which is so characteristic of disease in the hip, viz., pain in the knee, the affection is of about six months standing. The following treatment has been pursued:—eight leeches were applied around the joint every morning for a fortnight, after which blisters were applied to the same part; the blistered surface dressed with the ung. hydrarg.

May 5th, Mr. Scott ordered the hip to be dressed with the *unguentum hydrarg. c. camphor.* spread thickly on lint, then to be strapped with the *emplastrum plumbi*, after which to be covered with *emplast. sapon.* on leather, and over the whole a roller, nine yards in length, so as to keep the joint in a state of perfect quietude.

The treatment in this case has succeeded remarkably well. The patient has been discharged, having been in the house for a long period. Previous to the child leaving the hospital, the hip was dressed in the same manner. The child could move the limb in any direction without feeling pain but was ordered to be kept quiet in order to prevent any return of the disease.

STRUMOUS OPHTHALMIA.

E. S., ætat. 33, married, of a strumous habit, has been subject to attacks of inflammation of the eyes for several years. When admitted, she stated the eyes had been inflamed for about a month; but within a week preceding her admission they had become much worse.

On attempting to raise the lid, for the purpose of examining the eye; the intolerance of light was so excessive, that she could not for a moment bear the impression. There appeared to be great increase of vascularity of the eye, a number of vessels were seen running towards the cornea, and extending over its margin; the cornea itself appeared to be altered in texture, and opaque, there was a copious discharge of hot scalding tears, and shooting pains about the temples and forehead, vision was much obscured.

Mr. Scott ordered a large blister to be applied to the back of the neck, an issue to be made in each temple, and to take two grains of calomel every six hours, until the mouth became sore.

Under this plan of treatment, the patient experienced the most decided benefit. In the course of a short time the intolerance of light was much lessened, and the cornea appeared less opaque. The blister and issues afforded great relief on their discharging freely.

After a time, Mr. Scott directed the undiluted *liquor plumbi* to be dropped into the eyes, night and morning, and the patient has since left the hospital cured.

INJURY OF THE HEAD.

M. L., labourer, ætat. 38, was admitted under the care of Mr. Andrews with injury of the head.

On his admission, from intoxication, and the effects of the injury, he was incapable of giving any account of the manner in which he came by the accident, but we learned from one of the men who brought him to the hospital, that he had been quarrelling, and continued stunned for more than half an hour after the accident, and that there had been considerable hemorrhage from the head.

On examination, an extensive laceration of the scalp was found a little above the left temple, which left the bone denuded. The bone was at first supposed to be fractured, but on more minute examination this was found not to be the case, the supposed fracture being merely an indentation in the

bone. The wound of the scalp, he said, was inflicted by a pewter measure.

The wound was dressed with straps of adhesive plaster, the man was bled to twenty ounces, and ordered to have a dose of house-medicine directly, and to keep the head constantly wet with spirit wash.

3rd. Passed a bad night, and complains of great pain in the head; tongue dry, and covered with a white fur; pulse full and strong; bowels opened once; he was ordered to be bled freely, and to take calomel with jalap, a scruple directly, and two grains of calomel every four hours.

4. Slept for several hours during the night; bowels freely opened; pain in the head diminished; tongue less furred; pulse full and strong. The wound of the scalp does not look healthy; the adhesive straps have been removed, and a poultice applied. To repeat the venesection and continue the calomel.

5. Passed a very indifferent night, had no sleep, and was at times delirious; pulse 104, full; skin hot and dry; tongue furred; bowels open three times. To repeat the venesection, and continue the pills. The wound has a very unhealthy appearance, but the surrounding parts are less tumified.

6. Slept tolerably well during the night, and feels more comfortable this morning; pain in the head much diminished; tongue less furred; bowels open; skin more moist and cool; complains of his mouth being sore. To take the pills night and morning, instead of every four hours.

8. Much the same as on the 6th. The wound looks better, and discharges healthy pus; his bowels are open; skin cool; tongue clean; mouth much affected by the calomel. To take the pills only at night.

10. In every respect doing well; to discontinue the pills; the wound looks healthy.

12. From this time the man has had no bad symptom, and has since been discharged quite well.

The leg operated on by Mr. Andrews for femoral aneurism on the 4th ult. has continued doing well; the upper ligature came away on the 11th, seven days after the operation, and on the following day the other ligature likewise came away; the tourniquet was applied round the thigh as a measure of precaution, but no hemorrhage has taken place; the circulation appears to be properly carried on; the leg and foot are of the natural warmth and sensibility, and the arteries of the foot can be felt pulsating. The incision has not quite healed; the patient's general health appears to be pretty good.

The man operated on by Mr. Hamilton, for removal of the testicle, has left the hospital with the wound entirely healed.

TO CORRESPONDENTS.

A Correspondent intimates, that there are physicians residing in the neighbourhood of new Broad-street, "who meet, in consultation, persons who are neither surgeons, apothecaries, or chemists, to the manifest injury of the qualified practitioner," and he wishes us to give them "a hint." Perhaps, however, the parties, though coming under neither of the above denominations, are Dubs.

The ignorant individual who wrote the article in the literary journal forwarded by *J. F.* has only added another proof to the host of evidence, before us, that the occasional medical writers in the weekly literary publications know nothing of their business. They are, for the most part, a shallow set of fellows, unable to perceive the truth themselves, and incapable of displaying it to others. Books are put into their hands to be *praised* not *reviewed*, and he who buys a professional work on the strength of an opinion expressed by a bookseller's scribe, can only expect to be duped in the purchase.

Mr. R. C. King. We doubt whether the cases treated by the "peculiar, cheap, and universally successful remedy," were cases of genuine Asiatic cholera. The author himself avows the opinion.

We shall always be glad to hear from *C. R. B*, but the great number of practical papers constantly offering themselves to our notice, prevents us from inserting his present communication, which shall be preserved at the office for him.

The letter which we received a short time since, from *Mr. H. B.*, respecting Calais and the saline spa, is, excepting the private portion of it, so completely an advertisement, that we cannot accede to his wishes by giving the account insertion in our pages. We shall be happy to hear from Mr. B. jun.

The letter of *Mr. E. King* was not printed, because the case is so rare of occurrence that there was no chance of its publicity effecting its chief object,—a change in the law.

If *An Apprentice* (London) cannot by his own remonstrances, made in a proper manner, procure attention to his wants, his parents or friends should interfere.

The letter of *Castigator* next week.

Mr. Porter. The particular No. is out of print, but of most others of the volume, copies may be had through the medium of any bookseller. The No. will be reprinted.

Mr. Parkin must favour us with a sight of his MS. before we answer his question.

ERRATA.—In Mr. Youatt's Lecture of last week, page 545, col. 2. line 46, for *motions partly voluntary and partly involuntary*, read *involuntary motions.*

Page 546, col. 1, line 15, dele *and deglutition.*

Ditto, ditto, line 18, dele *organic.*

Page 547, col. 1, line last but one, for *Both the animal and organic nerves*, read *The animal nerves.*

Erratum in The Lancet Advertisement.—On the cover of the last Lancet, of the reprint of Vols. 9 and 10, last line, for *price one pound*, read *one pound seventeen shillings.*